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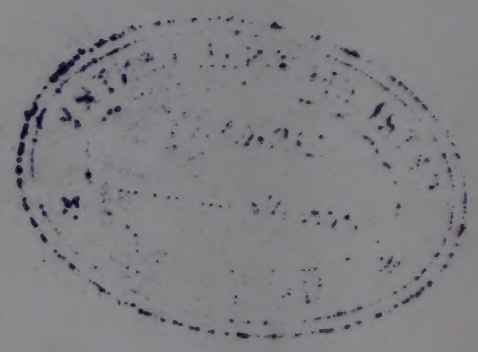
FISH TECHNOLOGY EXPERIMENT STATION
C.F.T.R.I.
MANGALORE.

INTERNATIONAL DIRECTORY OF FISH TECHNOLOGY INSTITUTES

prepared by

Fish Utilization and Marketing Service
Fishery Industries Division
Fisheries Department

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS



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Rome 1980

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PREPARATION OF THIS DIRECTORY

The first edition of this Directory appeared in 1976. In 1978 a request for revised entries was made to the institutes entered in the original version. The delay, until 1980, of bringing out the second edition has been due to computerization of the input.

The new and enlarged second edition has been edited by D. James, Senior Fishery Industry Officer, Fish Utilization and Marketing Service, Fishery Industries Division, FAO, Rome, who would be pleased to receive corrections, revised information or new entries. A number of typographical errors have occurred during transfer to a computerized format, and these will be corrected in future revisions if the editor is advised.

Distribution:

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Selector HP
Selected List of Institutions

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ABSTRACT

The International Directory of Fish Technology Institutes lists 94 institutes in 55 countries. All institutes have continuing programmes of research or development on the technology of fish as food. Basic information included in each entry lists name of director, address, major fields of interest, working facilities, professional staff and their programmes, as well as training activities and publications.

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ARGENTINA

CENTRO DE INVESTIGACION DE TECNOLOGIA PESQUERA (CITEP)
(FISH TECHNOLOGY RESEARCH CENTER)

1. Address

12 de Octubre 4728
7600 Mar del Plata
Argentina

Tel: 80 079
Telex: 39919 PTOOP AR

2. Director

Dr.R.E. Trucco

3. Responsible Authority

National Institute of Industrial Technology (INTI)

4. Source of Finance

From the responsible authority and center promotors, including other government institutions (CONICET, CIC Pcia.Bs.As., INIDEP) and fishing industry

5. Foundation Date

1974

6. Major Fields of Interest

Fish utilization technology
Information and service to the industry

7. Working Facilities

The Center has laboratories for chemistry, microbiology, biochemistry (proteins, lipids and enzymes) and product process development
In addition there are cold stores, canning and salting facilities and a library. Facilities of the fishing industry are also used

8. Professional Staff

R.E. Trucco	Dr. Chemistry (Director)
H.M. Lupin	Chem. Engineer (Vice Director)
J.J. Sánchez	Dr. Biochemistry
A. Zugarramundi	Chem. Engineer
C. Barassi	Dr. Biochemistry
C.L. Soule	Chem. Engineer
L. Davidovich	Dr. Chemistry
M. Crupkin	Lic. Biochemistry
R. Boeri	Chem. Engineer
E. Civit	Chem. Engineer
C. Martone	Lic. Biochemistry
C. Moreno	Agric. Engineer

9. Assistants

10 graduate fellowships, 2 techniciams

10. Programme

Studies on the keeping time of fresh and frozen hake
Studies on the salting and maturation of anchovy
Studies on salting and drying hake
Studies on the cooking and sterilization of fish for canning
Studies on the treatment of fish wastes and by-products recovery
Application of Economic Engineering techniques to the Fishing Industry

11. Training Activities

Although no formal training programme exists, the staff teaches a yearly course on Fish Processing Technology for graduate students, in connexion with the National University of Mar del Plata

12. Serial Publications

None, but collected reprints from published papers are available (in Spanish and/or English with abstracts in both languages)

AUSTRALIA

CSIRO TASMANIAN FOOD RESEARCH UNIT

1. Address

Tasmanian Food Research Unit
CSIRO
Stovell Avenue
Hobart 7000
Tasmania
Australia

Tel: 002 237371
Telex: AA 58300
Cable: CORESEARCH HOBART

2. Director

Dr. June Olley

3. Responsible Authority

CSIRO, Australian Government

4. Source of Finance

Government

5. Foundation Date

1947

6. Major Fields of Interest

Biochemistry
Fish utilization technology
Fish quality control
Trace metal interactions in seafoods

7. Working Facilities

The unit has chemical and biochemical laboratories, access to the CSIRO library system and a comprehensive pilot plant for canning, freezing and drying
The unit also has a minced fish separator, fish meat strainer and process facilities

8. Professional Staff

J.M. Olley	Biochemistry, Fish Technology - Section Leader
H.A. Bremner	Fish Technology
S.J. Thrower	Trace Metal Interactions, Biochemistry

9. Assistants

3

10. Programme

Minced fish technology
Rock lobster and mollusc processing
Ensilage of fish
Quality assessment and time temperature tolerance
Mercury-Selenium in Australian species - toxicity studies
Fish drying in collaboration with Dr. P.E. Doe, University of Tasmania

11. Training Activities

No formal training courses, but facilities exist for Colombo Plan and FAO Fellows to spend a period in the laboratory after study in Australia. Individual training is available by arrangement

12. Serial Publications

Food Research Quarterly
Annual Report of CSIRO Division of Food Research

AUSTRALIA

NEW SOUTH WALES STATE FISHERIES

1. Address

NSW State Fisheries,
P.O. Box N211,
Grosvenor Street,
SYDNEY
N.S.W. 2000

Tel: 20529 (Ext.425)
Cable: STATEFISH

2. Director

Dr. D.D. Francois

3. Responsible Authority

New South Wales State Government

4. Source of Finance

Commonwealth Fishing Industry
Research Trust Account
New South Wales State Fisheries

5. Foundation Date

1973

6. Major Fields of Interest

Fish utilization technology
Fish quality control
Packaging

7. Working Facilities

A utilization unit within the New South Wales State Fisheries has a laboratory and pilot plant. The Department has a well equipped research vessel and a good library

8. Professional Staff

T.B. Gorman	Senior Biologist - Resources Development
P. Parrish	Technical Officer - Fish Technology

9. Assistants

One Technical Assistant

10. Programme

Determination of the suitability of local fish species for fish curing
Establishment of suitable techniques for development of high quality products

11. Training Activities

No formal training programmes but assistance provided to appropriate processing agencies in New South Wales

12. Serial Publications

'Fisherman' (Journal of the NSW State Fisheries)

BANGLADESH

FISHERIES TECHNOLOGICAL RESEARCH STATION, CHANDPUR

1. Address

   Post office Baburhat
   Dist. Comilla
   Bangladesh

2. Director

   Md. Shahidullah (Deputy Director)

3. Responsible Authority

   Ministry of Forests, Fisheries and Livestock, Government of the People's Republic of Bangladesh

4. Source of Finance

   Government of the People's Republic of Bangladesh

5. Foundation Date

   1947

6. Major Fields of Interest

   Fish processing & preservation & utilization technology fish quality control

7. Working Facilities

   Two laboratories and a library

8. Professional Staff

   M. Shahidullah
   S.B. Bhattacharjee
   Helaluddin
   B. Rahman
   A. Khaleque
   A. Aziz
   Z. Uddin
   T.K. Das

9. Assistants

   3

10. Programme

    Handling, processing and preservation of fish
    Fish product development and standardisation of fish products and by-products including quality control
    Fish oil utilization technology
    Bio-chemical and nutrition studies on fish
    Utilization of trash fish

11. Training Activities

    None

12. Serial Publications

    Annual Report of Research Activities

BANGLADESH COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH, LABORATORIES

1. Address

Mirpur Road
Dhammondi, Dacca - 5
Bangladesh

2. Director

Dr.M. Siddique Ullah

3. Responsible Authority

Ministry of Education, Cultural Affairs, Scientific & Technological Research

4. Source of Finance

Government of the People's Republic of Bangladesh

6. Major Fields of Interest

Fish spoilage
Fish handling & preservation in ice
Fish processing & process development
Fish quality control

7. Working Facilities

Laboratory facilities: biochemical & microbial research & quality control
Pilot plant facilities: canning, etc
Cold storage facilities: cold rooms at 0 C, -5 C, -23 C and -36 to -4 C

8. Professional Staff

S.F. Rubbi
Muslemuddin
G.K. Joarder

10. Programme

Seasonal variations of essential nutrients
Biochemical and microbial spoilage
Fish handling & preservation in ice
Fish processing and product development
Production of fish meal and fish protein concentrate
Quality control
Utilisation of fish wastes
Advisory service to fish processing Industry

11. Training Activities

Trained staff of BFDC for quality control of frozen shrimps
Trained staff of Agricultural Marketing Dept. for quality control of exportable fish products

BELGIUM

RIJKSSTATION VOOR ZEEVISSERIJ (MARINE FISHERIES STATION)

1. Address

Ankerstraat 1
B-8400 Oostende
Belgium

Tel: 059 70789/70088

2. Director

P. Hovart

3. Responsible Authority

Ministry of Agriculture

4. Source of Finance

Government

5. Foundation Date

1962

6. Major Fields of Interest

About one third of the station's activities are in the fields of applied research and extension of fish technology. The other activities are fishing methods and biological research

7. Working Facilities

The station has chemical and microbiological laboratories, a library and pilot plant for smoking and drying

8. Professional Staff

P. Hovart	Director
W. Vyncke	Section Leader
W. Deschacht	Engineer
D. Declerck	Engineer
H. Devriendt	Engineer

9. Assistants

8

10. Programme

Subjective and objective measurement of quality
Fish handling at sea and ashore
Salting, drying, smoking and freezing of fish

11. Training Activities

Training is provided for students from universities and technical colleges. There are possibilities for the inclusion of foreign students

12. Serial Publications

Mededelingen van het Rijksstation voor Zeevisserij

BRAZIL

CENTRO DE PESQUISAS ICTIOLOGICAS

1. Address

Av. Duque de Capias, 1700
Caixa Postal, 650
60000 - Fortaleza
Ceara
Brazil

2. Director

---

3. Responsible Authority

National Department of Works against Droughts (DNOCS)

4. Source of Finance

Federal Government

5. Foundation Date

1966

6. Major Fields of Interest

The Centre was founded to promote development of the inland resources of the north east of Brazil. Its fields of investigation include limnology, taxonomy, reservoir management, fish culture and fish technology. Investigations in fish technology are centred on freshwater fish and shrimps for distribution to retail markets

8. Professional Staff

Jose Valdo Ferreira Freitas	Fish Technology - Head of the Fish Technology Section of the Center of Ichthyological Research

9. Assistants

1

10. Programme

The utilization of shrimp (Macrobrachium amazonicus) and its by-products from the resources of north east Brazil. Manual of the preparation of recipes of freshwater fish found in the north east of Brazil. Support of farmers intensively raising fish from the standpoint of preservation and presentation of fish

11. Training Activities

Short-term training (1 week to 1 month) is offered upon request in the areas of the preservation (salting, smoking, icing) of freshwater fish in tropical areas. Facilities - laboratory for chemical analysis, smoker, salting and drying installations located in the interior

12. Serial Publications

Technical Bulletin of DNOCS - published twice per year

BRAZIL

INSTITUTO DE TECNOLOGIA DE ALIMENTOS (ITAL)

1. Address

Av. Brazil, 2880
Caixa Postal - 139
13100 - Campinas - SP
Brazil

Tel: PABX-41-5555
Telex: 0191009
Cable: ITAL

2. Director

Agide Gorgatti Netto

4. Source of Finance

State Budget Sources
Ministry of Agriculture
International Organization
Industries and Cooperative Societies

5. Foundation Date

1963

6. Major Fields of Interest

Fish utilization technology
Fish quality control

7. Working Facilities

ITAL has planned a fish technology laboratory which will have chemical and microbiological laboratories, an experimental kitchen and a fully equipped pilot plant. A specialized library will be provided and the library services of ITAL at Campinas will be available as will their laboratory resources

8. Professional Staff

Ademar D.M. Torrano	Food Engineer - Fish curing
Cleso de Morais	Food Engineer - Freezing and refrigeration
Matajiro Kai	Chemical Engineer - Salting and smoking
Nelson J. Beraquet	Food Engineer - Canning

9. Assistants

1

10. Programme

Dried fish
The canning of Brazilian sardines (sardinella aurita)
The microbiology of fish and marine products
Shark processing: Chemical, biochemical and microbiological characteristics of shark as a raw material for the fish industry
Technico-economic study of the fish processing distribution and marketing system in the State of Sao Paulo
Tuna processing
Utilization of mechanically separated fish flesh
In the future the programme will include:
Studies on the utilization of underutilized species
Hydrolysed products obtained from fish industry wastes
Raw material handling
Quality control of the main Brazilian fish products
Better utilization of fish by-products as food
Diversification of processed fish products

11. Training Activities

A training programme is being visualized to start as soon as the laboratory is built. There is a big demand for training mainly for personnel working in the fish industry

12. Serial Publications

The technical papers are published as ITAL publications

BRAZIL

NUCLEO DE TECNOLOGIA ALIMENTAR DO PESCADO

1. Address

Fundacao Universidade do Rio Grande
Caixa Postal, 474
96200 - RIO GRANDE - R.S.
Brazil

2. Director

Julio Carlos Reguly

3. Responsible Authority

Fundacao Universidade do Rio Grande
(Rio Grande University Foundation)

4. Source of Finance

Ministry of Education and Culture
FINEP (Federal Government)

5. Foundation Date

1976

6. Major Fields of Interest

Fish technology
Quality control of fish and marine products

7. Working Facilities

The NUCLEO has chemical, microbiological and processing laboratories
There is also a library and a research vessel owned by the University

8. Professional Staff

Neusa Costa	Microbiology
Julio C. Reguly	Food Chemistry
Francisco Guimarae	Fish Technology
Fausto Neetzow	Engineering
Helena de Castello	Environmental Research

9. Assistants

3

10. Programme

Fish quality research
Fish processing technology - Extension work
Pollution and environmental research

11. Training Activities

Training can be conducted for the industry
Regular courses are given for students

BRAZIL

INSTITUTO NACIONAL DE PESQUISAS DA AMAZONIA (INPA)

1. Address

Telex: 922269 INPA BR

Estrada do Aleixo, 1756
69000 Manaus AM
Brazil

2. Director

Dr. Warwick Estevam Kerr

3. Responsible Authority

Conselho Nacional Cientifico e Tecnologico (CNPq)

4. Source of Finance

Federal Government

5. Foundation Date

1952

6. Major Fields of Interest

The Fish and Fisheries Division carries out studies on limnology, fish-biology, fish-culture, fish-technology and aquatic mammals

7. Working Facilities

Various laboratories, fishery equipment, boats, one laboratory for fish-technology. Several laboratories for fish-technology are under construction

8. Professional Staff

Wolfgang J. Junk	Head of Fish and Fisheries Division
3 PhD	Fish Technology
15 MSc	Fish Technology

9. Assistants

15 graduates, 30 field workers, 22 post-graduate students, 1 assistant for fish-technology

10. Programme

Short-term training on ongoing projects, post-graduate course on freshwater biology and inland fisheries

11. Training Activities

in Acta Amazonica

BULGARIA

INSTITUT PO RIBNA PROMISHLENOST (FISHERIES INSTITUTE)

1. Address

3 Industrialna Str.
Bourgas
Bulgaria

Tel: 056 47433
Telex: 083-522

2. Director

V. Hitilov

3. Responsible Authority

State Committee for Science, Technical Progress and Higher Education DKNTPVO
Agriculture and Food Ministry MSHP

4. Source of Finance

Government

5. Foundation Date

1965

6. Major Fields of Interest

Applied research and extension in fish utilization technology and quality control
Design of machinery

7. Working Facilities

The Institute has laboratories, library and a pilot plant as well as Freshwater Fisheries Station in Plovdiv with Experimental Stations

8. Professional Staff

V. Hitilov	Director
V. Velchev	Scientific Secretary, Economics
G. Tomassian	Fish Processing
M. Schaneva	Fish Processing
D. Madjarova	Fish Processing
J. Nechev	Fish Processing
M. Mihov	Microbiology
K. Maevski	Fishing techniques
P. Jechev	Fishing techniques
V. Krastev	Fishing techniques
V. Vasilev	Engineer
T. Zarkova	Design for fish processing
J. Jliev	Design for fish farming
S. Dermendjian	Machinery construction
I. Bakardjieva	Standardization
A. Petrova	Automatization of production processes

10. Programme

Technology of sterilized and non-sterilized fish products
Mechanization of fish production
Fishery economics
Automation of fish canning

12. Serial Publications

Trudove na Instituta po ribna promishlenost

CANADA

FISHERIES RESEARCH & TECHNOLOGY LABORATORY
NOVA SCOTIA TECHNICAL COLLEGE

1. Address

P.O. Box 1000
1360 Barrington Street
Halifax, Nova Scotia
Canada B3J 2X4

2. Director

E.G. Bligh

3. Responsible Authority

Nova Scotia Technical College

4. Source of Finance

Industry and government grants and contracts; services provided on a cost recovery basis

5. Foundation Date

1979

6. Major Fields of Interest

Fisheries engineering and seafood science with special emphasis on marine lipids, fish proteins and process engineering

7. Working Facilities

Well equipped laboratories for engineering, chemistry, biochemistry and microbiology related to seafood science plus a fully engineered pilot plant for process and design research and development

8. Professional Staff

E.G. Bligh	Director
R.G. Ackman	Marine Lipids
DT.A. Gill	Marine Proteins
(Vacant)	Process Engineering

9. Assistants

4 Research Associates

10. Programme

Chemistry and technology of marine oils and lipids
Fish oils in human and animal nutrition
Protein deterioration in frozen fish
Minced fish technology including salt minced fish
Fresh fish technology
Utilization of non-traditional species

11. Training Activities

Masters and Ph.D programs in fisheries engineering and seafood science. Special short-term training programs for industrial personnel, etc. are being developed

12. Serial Publications

None

CHILE

DEPARTAMENTO DE ALIMENTOS
ESCUELA DE CIENCIAS DEL MAR Y ALIMENTOS
CATHOLIC UNIVERSITY OF VALPARAISO
FOOD SCIENCE

1. Address

Av. Altamirano 1505
Valparaiso
Chile

Tel: 52049 7672

2. Director

Gabriel Dazarola M.

3. Responsible Authority

Catholic University of Valparaiso, Chile

4. Source of Finance

Chilean Government, private contracts

5. Foundation Date

1956

6. Major Fields of Interest

Oceanography
Fisheries
Food Science

7. Working Facilities

Department of Food Science: Pilot Plant;
Teaching and Research Laboratories
for Microbiology;
Biochemistry and quality control

8. Professional Staff

Gabriel Jimenez
Washington Tarkey
Sergio Kaiser
Marta Dondero
Fernando Garrido
Ismael Kasahara
Antonio Cifuentes
Nicola Arata
Jose H. Cabello
Miguel Paredes

9. Assistants

10

10. Programme

Utilization of non commercial species, microbiological quality of shrimp and langostinos; food preservations; utilization of waste from fish and plants; functional properties of foods; fish paste development

11. Training Activities

Courses are offered in Food Engineering, Biochemisty, Microbiology Food Technology, Quality Control, Sanitation

12. Serial Publications

Investigaciones Marinas
Contribuciones

CHILE

UNIVERSIDAD DEL NORTE (UNIVERSITY OF THE NORTH)

1. Address

Departamento de Pesca
Casilla 1280
Antofagasta
Chile

2. Director

Augusto Gonzalez Murchio

3. Responsible Authority

Universidad del Norte

4. Source of Finance

National government budget and occasional special contributions

5. Foundation Date

1960

6. Major Fields of Interest

Fisheries biology and exploration
Fishing methods
Fish technology
Oceanography
Mariculture
Control over quality of catch
Quality of fishing gear

7. Working Facilities

9 laboratories - General oceanography(1), Marine biology, fisheries and pisciculture (5), Bacteriology (1), Testing of fishing gear and control over use (2)
Pilot plant for canning and curing, smoking, drying (partial), sausage making (partial), refrigeration and freezing
A 20-m vessel
A library

8. Professional Staff

Carmen Camacho	Bacteriology
Eduardo Alvarez Q.	Fishing methods
Victor Mercado A.	Fishing methods

9. Assistants

1

10. Programme

Development of new products for canning or wet packing
Research on quality in order to set standards for mackerel canning

11. Training Activities

Training of fisheries officers on a five-year plan, offering, among other courses, specialization courses in use of catch

12. Serial Publications

Ciencias y tecnologia marina

COLOMBIA

INSTITUTO NACIONAL DE LOS RECURSOS NATURALES RENOVABLES Y DEL AMBIENTE

1. Address

INDERENA-Calle 26 No. 13B-47
Bogota
Colombia

2. Director

Julio Carrizosa Umana

3. Responsible Authority

Ministerio de Agricultura

4. Source of Finance

State budget

5. Foundation Date

1969

6. Major Fields of Interest

Fisheries biology
Fish technology
Quality control

7. Working Facilities

The Institute has a library and laboratory facilities for chemistry, microbiology and biology. In addition there are two chill stores for iced fish

8. Professional Staff

Gustavo Henriques Suarez	Fisheries Technology Consultant
Jaime Garcia	Technical Assistant to Industry
Victor Valle	Technical Assistant to Industry

9. Assistants

2

10. Programme

Small-scale production of fish meal
Extension work, teaching processing methods and quality control
Consultant service for industry and fisheries cooperatives

12. Serial Publications

Fisheries extension papers

CUBA

CENTRO DE DESARROLLO DE PRODUCTOS PESQUEROS (CDPP)

1. Address

Centro de Desarrollo de Productos Pesqueros (CDPP)
Edificio 54
Habana del Este
Ciudad de la Habana
Cuba

2. Director

Wilfredo Pomares Hernandez

3. Responsible Authority

Ministerio de la Industria Pesquera (MIP)
Comite Estuatal de Ciencia y Tecnica (CECT)

4. Source of Finance

Government

5. Foundation Date

1976

6. Major Fields of Interest

Investigations to make maximum use of fishery resources and improve quality of products
Mechanization of the fishery industry; improvement of technology and economics

7. Working Facilities

The Centre has comprehensive laboratories and pilot plant

8. Professional Staff

Wilfredo Pomares Hernandez	Director
Alfredo Gonzales Batista	Assistant - Director of Research and Development
Marilis Lezcano Leon	Evaluation and Control
Hugo Lamadrid Boada	Evaluation and Control
Sara Docampo Doval	Product Development
Pedro Suarez Gambe	Product Development
Tomas Hernandez Perez	Product Development
Omar Castanedo Ruiz	Product Development
Gladys Rodriguez Valdes	Product Development
Marta Milan Reyes	Product Development
Zoila Trujillo Vento	Product Development
Lourdes Modarse Diaz	Product Development
Maria E. Rodriguez Almeyda	Packaging
Hermina Linares Hernandez	Packaging
Carlos Blanco Montero	Packaging
Victoria Diaz Teresa	Science
Roberto Castelo Baez	Science
Juan Julian Martinez Medina	Science
Gerardo Navarro Garcia	Science
Yamila Dajkanova	Science
Andres Lobeiras Poyo	Science
Elsa Merlo Martinez	Microbiology Section
Griselle Cartas Orallo	Microbiology Section
Magalena Fuster Era	Microbiology Section
Anibal Garcia Berberena	Taste Panel
Marlen Gonzalez Cordova	Analytical Services
Manuel Calderon Chapman	Analytical Services
Alicia Esquerra Martinez	Analytical Services
Elina Perez Triana	Documentation Section
Gustavo Interian Ontiveiro	Documentation Section
Alfonso Li Siut	Economist
Mario Juan Quinones Broche	Legal Adviser

9. Assistants

33

10. Programme

Handling of fish at sea
Quality control and technological investigations for the industry
Investigations of the microbiology of Cuban fish species

DENMARK

TECHNOLOGICAL LABORATORY, MINISTRY OF FISHERIES

1. Address

Building 221
Technical University
2800 Lyngby
Denmark

Tel: 02 884066
Telex: 37529 DTH DIA DK
Cable: FISKERIFORSOEG COPENHAGEN

2. Director

Poul Hansen

3. Responsible Authority

Ministry of Fisheries

4. Source of Finance

Government

5. Foundation Date

1930

6. Major Fields of Interest

Fish utilization technology
Pollution control
Tuition in fish technology at university level

7. Working Facilities

The laboratory has analytical, microbiological and product development laboratories. In addition there is a library, comprehensive pilot plant, cold storage at a range of temperatures and a well equipped workshop

8. Professional Staff

P. Hansen	Director - Fresh fish handling
H.E. Hansen	Chemical analyses
H.H. Huss	Microbiology
P. Ikkala	Utilization of industrial fish
K. Baek Olsen	Handling of fish on board
W. Schmidtsdorff	Fishmeal and oil, pollution
F. Antonsen	Catch handling

9. Assistants

16

10. Programme

Handling of fish on board fishing boats
Fresh fish handling
Processing and preservation of fish and shellfish
Utilization of industrial fish
Pollution control
Product development

11. Training Activities

Annual 2-term courses on fisheries, fishing industry and fish technology for chemical engineering students of the technical university
Participation in training courses on quality aspects in handling and storage of fish for students from developing countries
Annual courses on fresh fish handling and fish and shellfish processing and preservation for the Danish fishing industry - 3-4 days

12. Serial Publications

Annual Report

DOMINICAN RP

CENTRO DE INVESTIGACIONES DE BIOLOGIA MARINA (MARINE BIOLOGY RESEARCH CENTRE)

1. Address

Santo Domingo
Universidad Autonoma de Santo Domingo
CIBIMA
Republica Dominicana

2. Director

Idelesa Bonnelly de Calventi

3. Responsible Authority

Universidad Autonoma de Santo Domingo

4. Source of Finance

Universidad Autonoma de Santo Domingo and the Organization of American States

5. Foundation Date

1960

6. Major Fields of Interest

Fisheries biology and quality control of catch

7. Working Facilities

Chemistry, microbiology and fisheries biology laboratories

8. Professional Staff

I. Calventi	Biologist, Director
M. Nunez R.	Biochemical analysis
J. Perez I.	Microbiology of food
E. Valers	Microbiology of food
S. Jakowska	Director of projects relating to poisoning by fish

9. Assistants

1

10. Programme

Microbiology of foods (shellfish)
Chemistry of fish and fish products
Biochemical derivatives from marine animals
Poisoning by fish
The biology and taxonomy of crustaceans

11. Training Activities

Short seminars in collaboration with official bodies on conservation, fisheries biology, etc., for fishermen and fisheries inspectors

ECUADOR

INSTITUTO NACIONAL DE PESCA (NATIONAL FISHERIES INSTITUTE)

1. Address

Letamendi 102 y La Orilla
Casilla 5918
Guayaquil
Ecuador

2. Director

Dr. Raul Ycaza Gomez, Director
Dr. Efren Lopez Leob, Sub-Director

3. Responsible Authority

Ministerio de Recursos Naturales y Energeticos
Subsecretaria de Recursos Pesqueros

4. Source of Finance

Government

5. Foundation Date

1960

6. Major Fields of Interest

Fishery Biology
Oceanography
Quality Control
Product Development

7. Working Facilities

Control de Calidad
Oceanografia
Plancton
Sedimentation
Biologia Pesquera
Limnologia
4 Barcos
1 Biblioteca
1 Museo
2 Piscifactorias

8. Professional Staff

Angel Ansaldo Garces
Enrique Reyes Astudillo
Luis Miranda Sanchez z
Francisco Yaong Basurto
Alfredo Florencio Luna
Manuel Freire Iniguez
Galo Bicaurte Romo-Leroux
Jaime Barragan Vasconez

9. Assistants

1

10. Programme

Atun
Clupeidos
Langosta
Camaron
Crustaceos

11. Training Activities

Investigaciones Economica y Estadistica

12. Serial Publications

Boletinos Cientifico-Tecnicos
Boletines de Informacion
Informes Pesqueros
Boletines Estadisticos

ETHIOPIA

FISHERIES DIVISION

1. Address

Fisheries Division
Ministry of Agriculture
P.O.Box 1232
Addis Ababa
Ethiopia

2. Director

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3. Responsible Authority

Ministry of Agriculture

4. Source of Finance

Government Budget

5. Foundation Date

1954

6. Major Fields of Interest

Fishery biology
Fish utilization technology

7. Working Facilities

Small fishing vessel for controlling illegal fishing
Documentation service
Issuing commercial and amateur fishing licences

10. Programme

Fish meal production
Salted drying of shark meat
Fresh fish supply
Mechanization of fishing gear
In the future attention will be paid to building landing sites and training fishermen in the formation and working of cooperatives

11. Training Activities

2-4 weeks a year: Demonstration facilities and films on various subjects, e.g., maintenance of inboard and outboard engines and fishing gear

FAROE IS

HYGIENIC INSTITUTE

1. Address

Debesartrod
DK-3800 Torshavn
Faroe Islands
(Via Denmark)

Tel: 15300/15301

2. Director

D.J. Baerentsen, Chief Veterinary Officer

3. Responsible Authority

Local Government

4. Source of Finance

Local Government

5. Foundation Date

1950: Fish Industry Laboratory (Fishery Department)
1975: Hygiene Institute (Fishery and Veterinary Department)

6. Major Fields of Interest

All aspects in connection with fish and food production and quality control. The laboratory has both an advisory function and a quality control function for the fish and food industry

7. Working Facilities

The unit consists of a modern chemical and a microbiological laboratory and has facilities for another product development laboratory. A special library is under construction

8. Professional Staff

J. Morkore	Chem.eng. - Head of Fishery Section
J. Olsen	Veterinarian - Head of Veterinary Section

9. Assistants

4

10. Programme

Utilization of blue whiting for human consumption
Quality control of fish, fishery products, plants and vessels

11. Training Activities

Every second year a training course for personnel from Fish Inspection and people from the fishing industry

FINLAND

TECHNICAL RESEARCH CENTRE OF FINLAND, FOOD RESEARCH LABORATORY

1. Address

Biologinkuja 1
SF-02150 Espoo 15
Finland

Tel: 90 4561
Telex: 12-2972

2. Director

Prof.O.E. Nikkila

3. Responsible Authority

Ministry of Commerce and Industry

4. Source of Finance

Government with payment by industry for work undertaken

5. Foundation Date

1942

6. Major Fields of Interest

Fish utilization technology
Fish quality control
Fish biochemistry
The Laboratory specializes in applied research and operates a consultant service for the country

7. Working Facilities

Laboratories and library

8. Professional Staff

Martti Kiesvaara
Tapani Hattula
Bengt Granroth

10. Programme

Maturation processes of fish semi-preserves
Fish and fish proteins
Aroma and taste properties of fish
Biogenic amines
Fish technology and product development

11. Training Activities

Training can be provided for graduates and undergraduates, including supervision of research work. Special training courses are also conducted for the industry. A maximum of six trainees is accepted for a period of not less than two months

12. Serial Publications

Annual and cumulative lists of publications

FRANCE

INSTITUT SCIENTIFIQUE ET TECHNIQUE DES PECHES MARITIMES
(INSTITUTE FOR SCIENCE AND TECHNOLOGY OF MARINE FISHERIES)

1. Address

rue de l'Ile d'Yeu
BP 1049
44037 NANTES Cedex
France

Tel: 749981
Telex: 711196

2. Director

Dr. Claude Maurin: Director
Dr. France Soudan: Chief of the Technology and Quality Control Service

3. Responsible Authority

Secretariat General a la Marine Marchande

4. Source of Finance

Government budget
Tax on fish processing industry
Research contracts

5. Foundation Date

1919

6. Major Fields of Interest

Oceanography and marine biology
Fishing technology (gear and methods)
Development of fishing industry
Processing of fishery products
Shellfish culture and sanitation
Marine pollution
Technical consultancy services to ministry and industry
Representing the government at national and international meetings
Administration of system of inspection for semi conserves, canned products and molluscs sanitation
Preparation of codes of practice

7. Working Facilities

A national Centre at Nantes with laboratories, central library, computer centre, comprehensive pilot plant and frozen storage facilities
There are also 12 coastal and 3 overseas laboratories

8. Professional Staff

122 Research staff (including inspection) plus 67 administrative personel

9. Assistants

114

10. Programme

Freezing and thawing studies
Sterilization times for cans
Residual pollution
Effect of thermal shock on marine production
Biochemistry of Nibrogenous components of marine animals
Rapid techniques for quality evaluation of raw material and processed products

11. Training Activities

Courses and conferences for marine science students
Training fellowships for students from developing countries
Specialized courses for french students

12. Serial Publications

Revue des Travaux de l'ISTPM (trimestriel)
Science et Peche (mensuel)
Contributions aux reunions statuaires du CIEM (communications et rapports)

GERMANY FR

INSTITUT FUR BIOCHEMIE UND TECHNOLOGIE

1. Address

D 2000 Hamburg 50
Palmaille 9
Fed.Rep. of Germany

Tel: 381601 (Ext.20)
Telex: 214911 BAHD

2. Director

PD Dr.W. Schreiber, lt.Dir.u.Prof.

3. Responsible Authority

Bundesforschungsanstalt fur Fischerei

4. Source of Finance

Bundesministerium fur Ernahrung, Landwirtschaft und Forsten, Bonn

5. Foundation Date

1921

6. Major Fields of Interest

Fish utilization technology/Background for legal regulations
Fish quality research

7. Working Facilities

The Institute has a total of eight chemical, microbiological and processing laboratories. There is also a library and a research vessel, with equipment for irradiation which may be used sometimes (property of the DWK)

8. Professional Staff

N. Antonacopoulos	Food chemistry
B. Bubmann	Processing
O. Christians	Microbiology and technology
W. Flechtenmacker	Processing/Freezing technology
G. Jacobs	Food chemistry
G. Karnop	Microbiology
H. Rehbein	Protein and enzyme chemistry
K. Reinacker	Food chemistry
J. Steinig	Food chemistry

9. Assistants

17

10. Programme

The programme is designed to solve problems in the fields of:
fish quality research
pollution and environmental research
process technology
engineering
utilization of Antarctic krill

12. Serial Publications

Contributions to "Archiv der Fischereiwissenschaft" and "Informationen fur die Fischwirtschaft"

GHANA

FOOD RESEARCH INSTITUTE

1. Address

P.O. Box M.20
Accra
Ghana

Tel: 77330/77647
Cable: FOODSEARCH

2. Director

J.M. Kordylas (Mrs.)

3. Responsible Authority

Council for Scientific and Industrial Research (Ministry of Economic Planning)

4. Source of Finance

Government

5. Foundation Date

1965

6. Major Fields of Interest

Fish utilization technology
Fish quality control and inspection

7. Working Facilities

Chemical, microbiological, processing and testing laboratories
A general pilot plant is about to be commissioned
Library

8. Professional Staff

Gladys Nerquaye-Tetteh	Food Scientist/technology-Processing and quality control
Lydia A.Bonsu	Food Scientist/technology-Processing and quality control
K.K. Eyeson	Food Chemist - analysis and quality control
Sophia Brakatu	Food Microbiologist-analysis and quality control
K. Okoso-Amaa	Marketing/Economist - economic evaluation of Fish preservation & Marketing techniques
P.A. Kuranchie	Agriculture Economist-Marketing and cost analysis

9. Assistants

6

10. Programme

Microbiological studies on salting and drying of fish such as trigger fish. (Balistes)
Chemical studies on the salting and drying of fish such as trigger fish. (Balistes)
Evaluation of improved fish smoking oven
Economic evaluation of fish processing technologies
Determination of optimum parameters for salting and drying fish: trigger fish (balistes sp.), puffer fish
Composition of some Ghanaian fishes of commercial importance
Economic Organization of supplies and utilization of fishery products in Ghana

11. Training Activities

Provision of training for workers on the factory floor in fish processing, quality control and principles of sanitation and hygiene. Duration: 3-6 months (June-November)
Orientation courses for senior personnel engaged in quality control and inspection of fish and fish products
Duration: 3 months (any time of the year)
Fish processing and quality control on-the-job training in the industry, etc

12. Serial Publications

Food Research Institute Reports

GUATEMALA

ICAITI (CENTRAL AMERICAN RESEARCH INSTITUTE FOR INDUSTRY)

1. Address

Avenida Reforma, 4-47, zona 10
Guatemala

Tel: 60631
Telex: 5312 ICAITI-GU

2. Director

Gabriel Dengo

3. Responsible Authority

Controlling Body: Board of 5 members, one from each of the 5 Central American countries

4. Source of Finance

Contribution of the 5 Central American Governments, income from contractual services and assistance from international agencies for specific projects

5. Foundation Date

1956

6. Major Fields of Interest

General fields of scientific and technical competence include: applied biology, applied chemistry, engineering, techno-economic studies, industrial engineering

7. Working Facilities

ICAITI operates its own laboratory having an area of 3800 sq.m. and office and other facilities of 1539 sq.m.

8. Professional Staff

44

9. Assistants

Technicians 9
Laboratory Assistants 15

10. Programme

Technical services and research activities include: technical information, chemical analysis, chemical and biological testing, physical testing, standards and performance testing, industrial trouble-shooting, applied research, development, pilot plant studies, industrial application of research results
Specialized fields of scientific and technical competence include: food preservation, processing tropical fruits, development of high-protein foods, utilization of natural flora for commercial extracts, geological studies of the Central America area, utilization of natural resources, pulp and paper, industrial microbiology, leather, textiles, metal-mechanical industries

11. Training Activities

Short, intensive courses have been given in food technology

12. Serial Publications

Institute publishes Boletin Informativo (News Letter) and Resumenes Tecnicos (Technical Resumes)

HUNGARY

RESEARCH INSTITUTE FOR CANNING AND PAPRIKA INDUSTRY

1. Address

H-1453 Budapest Pf.11
Hungary

Tel: 335750
Telex: 22-4108

2. Director

Szilveszter Torok

3. Responsible Authority

Ministry for Food and Agriculture
Canning Industry Trust

4. Source of Finance

Technical development funds of the Trust 70%, Production levy 30%

5. Foundation Date

1959

6. Major Fields of Interest

The Institute does research work to benefit the canning industry
Projects on the canning of fish are included

7. Working Facilities

Equipment and facilities for research into canning are provided

8. Professional Staff

Sz. Torok	Director
M. Szenes	Deputy Director
I. Devenyi	Deputy Director
J. Ott	Leader of the Technological Department
M. Harkay	Leader of the Analytical Department
J. Nagy	Leader of the Microbiological Department
J. Schmied	Leader of the Mechanical Department
E. Vagner	Leader of the Department for Instrumentation and automation
I. Koncz	Leader of the Department for Packaging
M. Rozse	Leader of the Economics Department

9. Assistants

62

10. Programme

Utilization of domestic freshwater fish and plant-eating fish
Increasing internal consumption of certain sea fish
Collaboration with fish-breeding institutes

11. Training Activities

Courses for the canning industry
Courses for foreigners are arranged through the Ministry or the Trust

ICELAND

ICELANDIC FISHERIES LABORATORIES

1. Address

Skulagata 4
Reykjavik
Iceland

Tel: 20240
Cable: FISKRANNSOKN

2. Director

B. Dagbjartsson

3. Responsible Authority

Ministry of Fisheries

4. Source of Finance

Government and services rendered to the fishing industry

5. Foundation Date

1935 as Fisheries Association of Iceland, Laboratories
1965 as Government Institute

6. Major Fields of Interest

Fish utilization technology
Quality control
Analytical and microbiological services

7. Working Facilities

4 chemical and 1 bacteriological laboratories in Reykjavik
1 chemical and 1 bacteriological laboratory in the Vestmann Islands
1 chemical and bacteriological laboratory in Isafjordur
1 chemical laboratory in Neskaupstadur
In addition in Reykjavik there are canning-processing-and fishmeal-pilot plants, library, cold stores, freezers and test kitchen

8. Professional Staff

B. Dagbjartsson	Food Scientist, Director-New product development
G. Arnesen	Chief Chemist-Trace elements, salted cod, seafood extracts
G. Valdimarsson	Chief Microbiological -General fish and water bacteriology, taxonomy
T. Eriksson	Chief Engineer-Processing technology and waste treatment
S. Sigurlinnason	Microbiologist-Fresh and frozen products, shellfish sanitation
P. Olafsson	Chemist-Publications, fish oils, chemical freshness tests
H. Thorhallson	Chemist-Fishmeal processing technology and control quality
J. Gudmundsson	Chemist-Chemical analysis of fishmeal and oil
A. Moller	Biochemist-Vitamins, organic contaminants, sensory tests
J. Ogmundsson	Food Scientist-Canning technology and quality quality control
J. Bjarnason	Chemist-Protein chemistry, nutrition
E. Martinsdotir	Chemist-Chemical analysis of raw materials
K. Vilhelmsson	Mech. Engineer-Drying of fish
J. Thorsteinsson	Biochemist-Biochemicals in sea-products
O. Kristinsson	Chemist-Chief, Vestman Islands Station
J. Johannesson	Chemist-Chief, Isafjordur Station
Th. Jonasson	Food Scientist-Chief Neskaupstadur Station

9. Assistants

8

10. Programme

Hydrolysates, and biochemicals from fish offal
Utilization of underutilized Icelandic fish and shellfish resources
Quality control of canned fish products
Chemical and bacteriological analyses of exported seafoods
Surveys on heavy metals and nutrients in Icelandic seafoods
Improvement of yield and quality of salted and dried fish
Consulting and quality control for the fishmeal industry
Effect of fish nutrition on product quality
Waste recovery from processing plants
Microbiological evaluation of industrial sanitation
Survey of contaminants in seafoods
Fish extracts for soup stocks
Drying of fish, using geothermal heat

ICELAND

11. Training Activities

Training in quality control for fishmeal production is given irregularly
Training courses for students of the Fishing Industry School

12. Serial Publications

Technological Notes-Leaflets of 5-20 pages are issued irregularly
Annual report - in Icelandic with English abstracts

INDIA

CENTRAL INSTITUTE OF FISHERIES TECHNOLOGY

1. Address

Central Institute of
Fisheries Technology
Willingdon Island
Cochin-682 003
Kerala
India

Telex: CN 440

2. Director

G.K.Kuriyan

3. Responsible Authority

Indian Council of Agricultural Research (ICAR),Krishi Bhavan,
New Delhi-110 001

4. Source of Finance

Consolidated funds of the Government of India, alloted through ICAR

5. Foundation Date

1957

6. Major Fields of Interest

Fishing vessels, gear, equipment accessories and fish catching methods both for marine and inland. Fish preservation, processing, utilization and packaging technology, fish biochemistry, nutrition and microbiology, fishery engineering, fishery extension and consultancy. Ad hoc training

7. Working Facilities

The Institute has separate disciplines for research and development work in the major fields listed above
It has Regional Research centres at Veraval(Gujarat state), Bombay(Maharashtra), Panaji(Goa), Calicut(Kerala), Madras (Tamilnadu), Kakinada(Andhra Pradesh), Burla(Orissa)
A pilot plant is attached to the discipline of engineering
A quality control and testing laboratory is attached to the disciplines of fish processing to give quality control and analytical service to the fish processing industry in India
A testing laboratory is attached to the discipline of fishing gear to give service to the gear materials manufacture in India
The Institute has a well established library and a fully equipped Conference Hall. The Institute also has a fishing fleet of small and medium size vessels (totalling 10) for investigations on fishing gear and methods

8. Professional Staff

M.R. Nair	Co-ordinator of the Project on Utilization of Trash Fish and Transportation of Fresh Fish
K. Mahadeva Iyer)	Coordination and research guidance on fish
C.C. Panduranga Rao)	bio-chemistry and microbiology
R. Venketaraman)	
P.V. Prabhu	Coordination and guidance in fish processing and packaging technology
S. Ayyappan Pillai	Coordination and guidance in fishery engineering
K.A. Sadanandan	Coordination and guidance in fishing gear and methods
R. Balasubramanian	Coordination and guidance in fishing craft technology
P.M.R. Kaimal	Coordination and guidance in fishery technology extension and consultancy

9. Assistants

Research scientists	- 147
Technical staff	- 149
Administrative	- 79
Supporting	- 147

10. Programme

Preservation and packaging of commercially important fishes. Canning techniques for fish and shell fish. Freezing preservation, dehydration of fish and fish products. Utilization of wastes from fish and shell fish. Biochemical investigations with reference to enzymes, proteins and lipids. Fish microbiology including pathogens in fresh and processed fish. Utilization of by-catch. Improvements in fish curing. Development of divers fishing gear and methods

suited to individual species of fish. Modifications for netting yarns. Development of newer construction materials and protection of fishing vessels. Development of equipment for fishing, fish handling and fish storage on board vessels. Development of control and measuring instruments for fishing and fish processing Development of machineries required for diverse fish processing methods. Statistical applications in fish processing industry Fishery extension and consultancy. Pilot plant studies on fish protein concentrate, accelerated freeze drying, solar drying and bacteriological peptone from fish

11. Training Activities

Short-term courses are conducted on fishing, fish processing and quality control aspects as and when necessary

12. Serial Publications

Technological notes and leaflets issued irregularly on important findings of field application
Bibliography on different disciplines issued irregularly
Special bulletins on specific subjects issued irregularly
Annual Report

INDIA

COLLEGE OF FISHERIES

1. Address

College of Fisheries
University of Agricultural Sciences
Mangalore-57002
Karnataka
India

Tel: 27834/6
Cable: FISHCOL

2. Director

Dr.H.P.C. Shetty

3. Responsible Authority

University of Agricultural Sciences, Bangalore

4. Source of Finance

State Government of Karnataka and Indian Council Of Agricultural Research

5. Foundation Date

May, 1969

6. Major Fields of Interest

Aquaculture
Fish Processing Technology
Fishery Biology
Fishery Engineering
Fishery Hydrography
Fish Microbiology
Fishery Economics
Fish Biochemistry
Fishery Statistics

7. Working Facilities

Each major field (department/unit) is provided with teaching and research laboratories
Pilot plants for freezing, canning, FPC and paste products
Cold stores and ice plant
Three mechanized sea-going vessels (OAL: 43'6",32'6" and 30') fully equipped for fishing and for conducting oceanographic research
The College has a substantial Library

8. Professional Staff

Professors - 6
Associate Professors - 13
Assistant Professors - 32

9. Assistants

Instructors - 23
Research Assistants - 6

10. Programme

By-catch utilization for human consumption
Control of microbial pollution in aquatic systems
Development of fish sausage and paste products
Diversification of canned products
Enzymes in fish processing
Fish spoilage psychrophiles
Preservation of fish and fishery products under frozen condition
Production of fish meal, fish silage and fish oil
Recycling of fishery industry wastes
In addition to the above major research programmes in fish processing technology, about forty other research programmes are in operation in various other sectors of fishery science

11. Training Activities

DEGREE PROGRAMMES
Bachelor of Fishery Science (BFSC)
Master of Fishery Science (MFSC)
Doctor of Philosophy (PhD)
SHORT TERM TRAINING PROGRAMMES
Fish Processing Technology
Fish Breeding and Culture
Fishery Management

INDIA

CENTRAL INSTITUTE OF FISHERIES EDUCATION

1. Address

Central Institute of Fisheries Education,
Versova
Bombay-400 61

2. Director

Dr.S.N. Dwivedi

3. Responsible Authority

Indian Council of Agricultural Research, Krishi Bhavan, Dr. Rajendra Prasad Road - New Delhi - 110001

4. Source of Finance

Indian Council of Agricultural Research, Krishi Bhavan, New Delhi - 110001

5. Foundation Date

1961

6. Major Fields of Interest

Teaching and research in:
Fish utilization technology
Product development and improvement of traditional products
Fish quality control
Fishing vessel and gear technology and design

7. Working Facilities

Fully equipped laboratories for chemical, microbiological studies and pilot plant for fish processing, comprising plate freezer, cold storages, Ice making machine, Drying and smoking kiln, super pressure autoclave, double seaming machine, exhaust box, slicing machine, silent cutters, mixers etc., fishing boats, fishing boat and gear laboratory, General workshop and Library

8. Professional Staff

D. Ramananda Rao	Processing technology
P.S. Chowdhury	Processing technology
Vacant Posts 3	Processing technology
Y. Sreekrishna	Fishing technology
A. Rajan Abraham	Fishing technology
S.K. Bhatnagar	Fishing technology
P.D. Bari	Fishing technology

9. Assistants

12

10. Programme

Teaching and research in handling and processing of underutilised fish and commercially important fish. Quality control of fish and fishery products, Fishing and handling of fish on board fishing vessels

11. Training Activities

Training provided for post graduate diploma course in fishery science
Short term training course on specialized fields of fish handling and processing, net making, practical gear technology and fishing
Handling and preservation of inland fish at Inland Fisheries Training Centre, Barrackpore and at Extension Training Centre, Hyperabad

12. Serial Publications

Newsletters (monthly), Annual Bulletin

INDONESIA

INSTITUTE OF FISHERY TECHNOLOGY

1. Address

JL. Karel S. Tubun
Pos Palmerah
Jakarta
Indonesia

Tel: 581634/5

2. Director

Sofyan Ilyas

3. Responsible Authority

Agency for Agricultural Research and Development, Department of Agriculture

4. Source of Finance

Indonesian Government Second Five Year Development Plan

5. Foundation Date

1964

6. Major Fields of Interest

Fish quality control
Fish utilization technology
Product development and improvement of traditional products

7. Working Facilities

The Institute has chemical, microbiological and home economics laboratories and a pilot plant

8. Professional Staff

Sofyan Ilyas
Andurrahman
Moeljanto R.
Sumpeno Putro
Endang Sri Heruwati
Suyuti Nasran
P.R. Tambunan
Yunizal

9. Assistants

11

10. Programme

Quality control for the export shrimp and frog leg industries
Improvements in handling, storage , packaging and distribution of fish

11. Training Activities

Courses are given on fish processing, inspection and quality control
The laboratory facilities are used by students of the Fishery Academy
Product development and improvement of traditional processing methods

12. Serial Publications

Research Report of the Institute of Fishery Technology (six-monthly)

IRELAND

AN BOARD IASCAIGH MHARA (B.I.M.) (IRISH SEA FISHERIES BOARD)

1. Address

P.O. Box 275
Hume House
Ballsbridge
Dublin 4
Ireland

Tel: 683956
Telex: 4166
Cable: BIM DUBLIN

2. Director

B.M. O'Kelly, Chairman

3. Responsible Authority

Minister for Agriculture and Fisheries

4. Source of Finance

Government

5. Foundation Date

1952

6. Major Fields of Interest

All aspects of fisheries development
Quality control
Product and process development
Education and training
Fishery biology

7. Working Facilities

One laboratory

8. Professional Staff

T. Gates	Engineer
J.M. Somers	Food technologist

9. Assistants

2

10. Programme

Quality control - advisory and laboratory service
Technical advisory service
Product development - canning and bottling

11. Training Activities

In-plant training of key personnel in:
Quality control
Refrigeration
Equipment operation and maintenance
Hygiene
Port courses on fish handling

ISRAEL

FISHERIES PRODUCTS LABORATORY

1. Address

Ministry of Agriculture
Department of Fisheries
Fisheries Technology Unit
P.O.B. 699
Haifa 31 000
Israel

Tel: 04 642345

2. Director

Abraham Herzberg

3. Responsible Authority

Ministry of Agriculture, Department of Fisheries

4. Source of Finance

Government Budget
Payments for quality tests(through Treasury)

5. Foundation Date

1970

6. Major Fields of Interest

Fish quality control
Fishery biology
Development of objective indicators of quality

7. Working Facilities

Laboratory - 6 rooms, basic laboratory equipment
Library - nucleus started five years ago
The biochemical laboratory is part of the Fisheries Technology Unit which also deals with gear and methods, fishing surveys, stocking and fishery ecology and extension services in these fields

8. Professional Staff

Abraham Herzberg	Chief, Fisheries Biochemical Laboratory - Biochemical species identification
Rachel Pasteur	Freshness determination - Fisheries products technologist
Elisabeth Letai	Microbiologist - Fisheries products technologist

9. Assistants

2

10. Programme

Development of objective quality tests for local fish species
Quality control of imported fish and fishery products
Monitoring pesticides residues especially in pond-bred fish
Species identification
Quality and acceptability of silver carp(hypophthalmichthys militrix)
Properties and utilization of Mirogrex terrae-sanctae(Kineret bleak)
Prevention of melanosis in shrimps

11. Training Activities

Quality control
Candidates should apply to the Ministry of Agriculture, Hakirya, Tel Aviv, Dept. for International Cooperation
The use of biochemical methods in fisheries research

12. Serial Publications

Fisheries Technology Unit Annual Report

JAPAN

TOKAI REGIONAL FISHERIES RESEARCH LABORATORY

1. Address

Kachidoki 5-5
Chuoku
Tokyo
Japan

Tel: 03 531122/5332241

2. Director

Takeshige Yamakawa

3. Responsible Authority

Ministry of Agriculture and Forestry

4. Source of Finance

National budget

5. Foundation Date

1929

6. Major Fields of Interest

Fishery biology
Fish utilization technology
Fish quality control

7. Working Facilities

The Institute has a total of 30 research laboratories, a library and two well equipped research vessels

8. Professional Staff

K. Miwa	Fish processing
T. Tokunaga	Fish processing
H. Iida	Fish processing
K. Nakamura	Studies on fishy odour
K. Arai	Studies on methods of animal experiments
M. Shibata	Lipids biochemistry
S. Izeki	Liquified FPC
M. Takei	Pollution control and waste utilization
M. Takeuchi	Aquaculture-feeds and fish meal
Y. Fujii	Fish processing
R. Sugii	Fish processing
K. Nakamura	Fish processing
S. Ishii	Chemical analysis of lipids in marine animals
N. Ishikawa	Fish processing, fish meat paste
M. Sasajima	Microbiology
H. Uchiyama	Quality control, partial freezing
H. Tozawa	Wholesomeness of marine food
S. Sasayama	Product quality and safety
T. Fujii	Microbiology of marine products
T. Tanaka	Freezing
S. Kakuta	Freezing
M. Bito	Freezing
N. Tsukuda	Quality control
S. Ebira	Evaluation of freshness of fish
H. Hirao	Chemistry and utilization of seaweeds
S. Murayama	Enzyme application
T. Suzuki	Food technology on fish protein
K. Nagakura	PCB in marine animals
H. Shimma	Lipids in marine animals, chemical analysis of PCB
S. Arima	Microconstituents in fish and shellfish
A. Suzuki	Identification of species specific antigen
S. Umemoto	Protein biochemistry
Y. Shimizu	Browning of fish meat
T. Onishi	Enzyme in fish
J. Yamada	Histochemical studies on marine animals and products
R. Kikuchi	Utilization and chemical studies on seaweeds
M. Okada	Utilization and Kamaboko production

10. Programme

A feasibility study for utilization of Antarctic krill as food
Utilization of surplus small pelagic fish
Utilization of abyssal fishes
Studies on chemical methods for quality evaluation of marine foods
The effect of pollution on fish utilization
Pollution control in fish processing
Production of single cell protein by using fish waste extract
Studies on single cell protein for fish feeds

JAPAN

11. Training Activities

Training courses of six months duration start at the beginning of May under the Colombo Plan, Middle and Near East and Africa technical Cooperation Plan, Central and South America Cooperation Plan and North Eastern Asia Plan
Training in research on fish processing and quality control is also given to government officers and university professors

12. Serial Publications

Bulletin of Tokai Regional Fisheries Laboratory
Collected Reprints from Tokai Regional Fisheries Research Laboratory

KOREA REP

FISHERIES RESEARCH AND DEVELOPMENT AGENCY, OFFICE OF FISHERIES

1. Address

2-16 Namhang-Dong
Yungdo-Gu
Busan
Korea

2. Director

Ik Sung Choi

3. Responsible Authority

Office of Fisheries, Ministry of Agriculture and Fisheries, Government of the Republic of Korea

4. Source of Finance

Government of Korea

5. Foundation Date

1921

6. Major Fields of Interest

Fishery biology
Fish utilization technology
Fish quality control
Oceanography
Fisheries resources
Fishing gear
Fisheries extension

7. Working Facilities

Microbiological and chemical laboratories
Pilot plant for freezing, canning, drying, smoking, fish meal and fish meat braying
Research vessel
Library and documentation service

8. Professional Staff

Ok Sung Bae	Fish Processing Specialist - Chief of Utilization and Food Processing Section
Seong Jun Kim	Bacteriologist - Research work
Dong Suck Chang	Bacteriologist - Research work
Sang Kwan Lee	Chemical Analyst - research work
Sang Bok Shur	Fish Processing Specialist - Research work
Yong Cheul Shin	Fish Processing Specialist - Research work
Chun Sam Jeong	Fish Processing Specialist - Research work
Sam Moo Lee	Fish Processing Specialist - Research work
Chang Kook Lee	Fish Processing Specialist - Research work
Keum Yeul Lee	Fish Processing Specialist - Research work
Jong Kap Lee	Bacteriologist - research work

10. Programme

Sanitary survey of oyster growing areas: Micro-organisms, heavy metals and other food poisoning materials
Utilization and processing of Alaska pollack:
Drying and investigation of seasoned products
Utilization of frozen Alaska pollack as a raw material for brayed fish products
Utilization of shark: A seasoned and smoked shark portion sealed in retortable pouch
Utilization and processing of seaweeds: Salted and seasoned products of sea mustard and kelp

12. Serial Publications

Annual Report of Fisheries and Development Agency
Bulletin of Fisheries Research and Development Agency
Technical Report of Fisheries Research and Development Agency

KOREA REP

FOOD RESEARCH INSTITUTE
AGRICULTURE AND FISHERY DEVELOPMENT CORPORATION

1. Address

13-8 Noryangjin-dong
Kwanal-gu
Seoul
Korea

Tel: 68 20117
Telex: AA FDC K2397
Cable: AGRIFIDEC SEOUL

2. Director

Byong Yong Min

3. Responsible Authority

Ministry of Agriculture and Fisheries, Government of the Republic of Korea

4. Source of Finance

Government of the Republic of Korea

5. Foundation Date

1971

6. Major Fields of Interest

Fish utilization technology
Fish quality control

7. Working Facilities

Chemical laboratories
Pilot plant for freezing, canning, drying, smoking, and fish meat braying
Library

8. Professional Staff

Byong Yong Min	Director
Song Ho Yoon	Fish Processing Specialist - Chief of Marine Food Section
Jun Hong Nah	Chemical Analyst

9. Assistants

3

10. Programme

Development of intermediate moisture foods from fish
Research on smoking of fatty fish
Development of canned anchovy fillets

11. Training Activities

Laboratory is open to students during their summer and winter vacation for training

12. Serial Publications

Annual Reports

MALAYSIA

UNIVERSITY OF AGRICULTURE
DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

1. Address

Department of Food Science and Technology
University of Agriculture
Serdang, Selangor
Malaysia

2. Director

Vice Chancellor: Prof. Tan Sri Dato Dr. Mohamed Rashdan bin Haji Baba

3. Responsible Authority

University of Agriculture

4. Source of Finance

University

6. Major Fields of Interest

Fish utilization is important in the teaching and research programmes of the University

7. Working Facilities

New premises are being planned

8. Professional Staff

Ms. Asiah Mohd. Zain	Low cost, high protein food from fish
Dr. Mohamad Salleh Ismail	Solar drying, fermentation
Dr. Yu Swee Yean	Fish drying

9. Assistants

Graduate students

10. Programme

Development of low cost products from fish
Introduction of improved solar driers, with auxiliary heating, to the fish processing industry
Fermented products
Changes in amino acids composition of fish as a result of processing

11. Training Activities

Undergraduate courses as well as MSc and PhD studies in food science and technology

MALAYSIA

MALAYSIAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE (MARDI)
AGRICULTURAL PRODUCTS UTILIZATION DIVISION

1. Address

Serdang
Selangor
Malaysia

Tel: 356286/356281
356261/356233
Cable: MARDI

2. Director

Dr.Ahmad Zaharudin Idrus

3. Responsible Authority

Ministry of Agriculture

4. Source of Finance

Government of Malaysia

5. Foundation Date

Food Technology Research and Development Centre 1967
Fish Processing Research Station 1970

6. Major Fields of Interest

Fish utilization
Quality control

7. Working Facilities

At Serdang there are comprehensive laboratory and pilot plant facilities
The Kuala Trengganu Station has quality control and analytical laboratories and a pilot plant. It is equipped for product development, particularly canning, freezing and smoking

8. Professional Staff

Ismail Abdullah
Wan Johari (At Kuala Trengganu)
Ahamad Kamari
Zahara Merican
Yeoh Quee Lan

9. Assistants

10

10. Programme

Fish handling and preservation directed to the reduction of spoilage losses
Improvement of traditional products, development of new products and industrial processing methods
Quality assessment of export products
Preparation of fish silage

11. Training Activities

The Station offers training programmes in food processing to employees of government and statutory bodies

MALAYSIA

UNIVERSITI SAINS MALAYSIA
(SCHOOL OF INDUSTRIAL SCIENCE AND TECHNOLOGY)

1. Address

Universiti Sains Malaysia
Minden
Penang
Malaysia

Tel: 25311 (Ext.272)
Cable: UNISAINS

2. Director

Prof.P.D. Ritchie

3. Responsible Authority

Ministry of Education

4. Source of Finance

Government

5. Foundation Date

1952 for the School
1969 for the University

6. Major Fields of Interest

One of the School's five main sections is Food Science and Technology which includes fish utilization technology

7. Working Facilities

Two laboratories and the usual university library with books and periodicals on food science and technology

8. Professional Staff

Lim Chin Lam	Lecturer in food science and technology
Sewow Chee Choon	Lecturer in food science and technology
Lim Phaik Ee	Lecturer(part-time) in biochemistry & nutrition
J.D. Owens	Lecturer(part-time) in food microbiology

9. Assistants

2

10. Programme

Teaching and research

11. Training Activities

Teaching of students toward a degree in Bachelor of Science and Technology(B.Sc. Techn.), with specialization in Food Science and Technology. This includes teaching on the University premises during academic session with attachment training on industrial premises during long vacations

MAURITIUS

MINISTRY OF FISHERIES

1. Address

Ministry of Fisheries
Government House
Port Louis
Mauritius

2. Director

J.D. Ardill

3. Responsible Authority

Government of Mauritius

4. Source of Finance

Government of Mauritius

5. Foundation Date

1946

6. Major Fields of Interest

Fishery biology
Fish utilization technology
Fish quality control

7. Working Facilities

The Ministry has two pilot plants, a library and a research vessel

8. Professional Staff

J.D. Ardill	Biologist - Chief of Division
R.K. Thompson	Biologist in charge of Prawn Rearing Programme
M. Hunbodh	Biologist - Fisheries Officer
Y. Sanson	Fisheries Protection Officer
S. Goupal	Biologist - Fisheries Officer
I. Jahangeer	Biologist - Fisheries Officer

10. Programme

Production of salted and dried fish and shark
Quality control of frozen and fresh catch of fishing fleet
Preservation and marketing of prawns
Study of Ciguatera toxicity of fish

MOROCCO

INSTITUT DES PECHES MARITIMES

1. Address

Rue de Tiznit
Casablanca
Morocco

Tel: 267811/266967/276088
Telex: IDEMAR 23823M

2. Director

M. Azzou

3. Responsible Authority

Office National des Peches - ONP (National Fisheries Office)

4. Source of Finance

ONP

5. Foundation Date

1954

6. Major Fields of Interest

Fisheries biology
Technology of use of fish
Fish quality control

7. Working Facilities

The Institute has three laboratories for technology and a well equipped pilot plant for canning, freezing, smoking, etc

8. Professional Staff

M. Bouyard	Veterinarian
M. Idrissi	Chemist
Gaira el Hachmi	Microbiology

9. Assistants

3

10. Programme

Research to develop new fish products
Research on the introduction of processing systems for underutilized species
Introduction of new methods of packing of fresh, frozen and canned fish
Introduction of new machinery in the fish processing industry
Introduction of new technological methods
Determination of quality of fish and fish products by both subjective and objective methods

NETHERLANDS

INSTITUTE FOR FISHERY PRODUCTS (TNO)

1. Address

P.O.Box 183
Ijmuiden
The Netherlands

Tel: 02550/19022

2. Director

J.J.Doesburg

3. Responsible Authority

Organization for Nutrition and Food Research TNO

4. Source of Finance

Government subsidy 55%
Ministries of Agriculture and Fisheries, Health and Development Aid, Fishing Industry and Trade 45%

5. Foundation Date

1958

6. Major Fields of Interest

Fish utilization technology
Quality control
Material testing
The Institute is mainly involved in applied research and has extension functions which include development aid

7. Working Facilities

Chemical, microbiological and material testing laboratories
Pilot plants for freezing, canning, filleting, smoking, fish meal, FPC, and marinating and salting
Cold stores
Use is made of experimental fishing vessels of the Ministry of Agriculture and Fisheries, which are equipped with freezing facilities
The irradiation plant of the Ministry of Agriculture and Fisheries is also used for experiments

8. Professional Staff

J.J. Doesburg	Food Science - Director
H. Houwing	Food Technology - Deputy Director and Head of the Department of Technology
B. Meyboom	Food Technology - Liaison Officer for Development Aid and similar projects
J. Bon	Food Technology
L. van Pel	Refrigeration - Head, Subsection of Regrigeration
J.B. Luten	Chemistry - Head of Chemical Laboratory
K.J.A.van Spreekens	Microbiology - Head of Microbiological Laboratory

9. Assistants

5

10. Programme

Fish handling at sea and onshore, including freezing and containerization
Irradiation of fresh fish and shrimps
Improvement of filleting plants
Improvement of smoking processes
Aspects of quality control, e.g., with regard to EEC Regulations and Codex Alimentarius Standards; chemical, microbiological analyses
Determination of heavy metals (Hg, Cu, Fe, Cd, As, Se) in fishery products
Microbiology of fishery products
Marinating process
Development aid programmes (e.g., Tanzania)
Production and use of minced fish

11. Training Activities

Individual training is given in various fields of fish utilization, chemistry and microbiology. An entrance fee of Netherland Guilders 1000 and a monthly fee of Netherland Guilders 1500 is charged
In the future it is hoped to run three-month training courses each

year in theoretical and practical aspects of fish preservation These will be for ten participants from developing countries, who are expected to have a B.Sc. degree, or equivalent, and a good knowledge of English

12. Serial Publications

Annual Reports (in Dutch)

NEW ZEALAND

FISHING INDUSTRY BOARD

1. Address

P.O. Box 9232
Wellington
New Zealand

Tel: 858903 Wellington
Cable: FISHBORD

2. Director

M.E. Jarman

3. Responsible Authority

Minister of Agriculture and Fisheries

4. Source of Finance

Fishing Industry Levy, plus some direct funding from Government
Food technology research costs are subsidized on a 1:1 basis by the Department of Scientific and Industrial Research

5. Foundation Date

1964

6. Major Fields of Interest

Fish quality control) Food technology
Fish utilization technology) research
Resource investigations

7. Working Facilities

The Board's Food Technology Research Programme is performed by the Massey University Food Technology Research Centre
Laboratory facilities comprise a laboratory in Nelson and a mobile laboratory (a 24 ft caravan)
The Fishing Industry Board maintains a library

8. Professional Staff

M.E. Jarman	Food Technology - General Manager
J.S. Brown-Rennie	Fish Utilization & Promotion, Local Marketing - Assistant General Manager
R.O. Armitage	Economic Market Development - Market Development Officer (Research and Service)
G.J. Lockley	Training - Executive Training Officer
R.J. Jenkins	Aquaculture - Technical Officer (Aquaculture)
M.P. Parsons	Fishing Methods - Technical Officer (Fishing Methods)
D. Muthumala	Economics Research Officer
M.S. Boyd	Food Technology - Research Officer
M.J. Wilson	Food Technology - Research Assistant
J.B. Ammond	Food Technology - Technical Officer (Processing)
Mrs E.J. Phipps	Fish Utilization and Promotion - Home Economist
T.D. Walshe	Economics - Market Development Officer
D.C. Arthur	Fishing Methods - Technical Officer (Fishing Methods)
D. Woods	Fishing Methods - Technical Officer (Fishing Methods)

10. Programme

Wet Fish Quality
Rock Lobster Quality
Eel Quality
The long-term objective is to establish processing and handling techniques which will optimize quality levels, and to incorporate these into recommended or mandatory codes of practice for use by the Industry (catching, processing, storage and retail sectors)
Extension education in quality matters to industry
Squid utilization
Aquaculture - practical investigations

11. Training Activities

Training provided for various sectors of the fishing industry on such matters as gear technology and quality requirements
Such training is usually on site or in port
National seminars are periodically held on such subjects as: quality control, mussel farming, eel farming, squid

12. Serial Publications

Fishing Industry Board Bulletin

NIGERIA

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY UNIVERSITY OF IFE

1. Address

Department of Food Science and Technology
University of Ife
Ile-Ife
Nigeria

Tel: IFE 2291
Cable: IFE VARSITY

2. Director

Prof. G.R. Howat

3. Responsible Authority

University of Ife

4. Source of Finance

University funds together with financial help from the Royal Netherlands Government under a Technical Assistance scheme to the Department

5. Foundation Date

1971

6. Major Fields of Interest

Fish preservation especially through smoking
Production of fish protein concentrate
Quality control assessment of fish at point of sale

7. Working Facilities

Department laboratory and simple processing facilities

8. Professional Staff

M.B. Abedona	Fish technology

9. Assistants

1

10. Programme

Production of good quality locally-produced smoked fish from freshwater, lagoon and marine species. The smoked fish is to have a shelf-life in a flexible pack of about 3-4 weeks
Production of good fish protein concentrate to supplement the protein in deficient diets

NIGERIA

NIGERIAN INSTITUTE FOR OCEANOGRAPHY AND MARINE RESEARCH

1. Address

Victoria Island
P.M.B. 12729
Lagos
Nigeria

Tel: 23018
Cable: OCEANOGRAF

2. Director

R.O. Bayagbona

3. Responsible Authority

Federal Government of Nigeria through the National Science and Technology Development Agency

4. Source of Finance

Federal Government of Nigeria

5. Foundation Date

1975

6. Major Fields of Interest

Fish utilization technology
Fish quality control
Fishing gear and crafts
Nutrition of pond-raised fishes

7. Working Facilities

The station has biochemical laboratories (3) and a microbiology laboratory as well as pilot plant and fish meal, (4) cold stores, library and research vessels (2)

8. Professional Staff

S.O. Talabi	Biochemistry - Coordination of research in fishery technology
T. Obileye	Protein Biochemistry
A.O. Banjo	Biochemistry
J.E. Igbinosun	Fish Processing

9. Assistants

J. Egesimba	Storage
S. Bossey	Fish meal
O. Oladosu	Pilot Plant Maintenance
O.A. Ogunmuyero	Instruments Maintenance
A. Banwo	Senior Laboratory
T. Ladeowo	Refrigeration Maintenance

10. Programme

Drying preservation technology of Nigerian fishes
Quality parameters for fish protein concentrates
Chemistry of dried fish during storage
Freezing of distant water fishes
Microbiology of fish and shrimp spoilage
Biochemistry of fish tissues
The chemistry of shark liver oil
Fish feed technology
In the future the programme will be directed to:
Packaging of dried fish and intermediate moisture fishery products
Fish meal and FPC Type B
Canning of pelagic fishes
Biochemistry, technology and nutritive value of shrimp head meal
Nutritional studies on locally produced fish meal
Economics of mechanical dryers in large-scale fisheries in developing countries

11. Training Activities

Training provided through the Federal Fisheries School. Research Scientists provide training for the State Fisheries Officers who must be sponsored by their State Government

12. Serial Publications

Annual Reports (1972 - 1976)

NORWAY

GOVERNMENT VITAMIN INSTITUTE DIRECTORATE OF FISHERIES

1. Address

P.O.Box 187
Lars Hilles gt.26
N-5001 Bergen

2. Director

Dr. Olaf R. Braekkan

3. Responsible Authority

Ministry of Fisheries

4. Source of Finance

Government

5. Foundation Date

1975

6. Major Fields of Interest

Research on nutritive value, quality and composition of fish and fish products for human and animal consumption. Vitamin investigation, fatty acid studies, protein value, trace elements (particularly contaminants), nutrition - aquaculture

7. Working Facilities

Laboratories for chemistry, microbiology, physics and growth studies

8. Professional Staff

9 Nutrition
Chemistry
Biochemistry
Microbiology
Microconstituents
Physics

9. Assistants

21

10. Programme

Continuous survey of the nutritive value of fish and fish products
Composition of lipids in fatty tissue of fish
Supplementary vitamin supply to wet fodder for trout
Use of acid as preservative agent for trout and salmon feedstuffs
Oxidation of fish protein
Microconstituents (contaminants) in fish and fish products
Isolation of protein fractions for enzymatic studies
Development of method for physico-chemical determination of vitamin D content in marine oils
Microbiological investigations of mildly salted, smoked fish

NORWAY

NORWEGIAN HERRING OIL AND MEAL INDUSTRY RESEARCH INSTITUTE, SSF

1. Address

5033 Fyllingsdalen
Norway

Tel: 05 268025 (Bergen)
Cable: SILDEFORSKNING
Telex: 40087 FORSK N

2. Director

Gudmund Sand

3. Responsible Authority

Association of fishmeal manufacturers
Fishermen's sales organization

4. Source of Finance

Trade	-	60 percent
Public funds	-	25 percent
Services	-	15 to 25 percent

5. Foundation Date

1948

6. Major Fields of Interest

Fish utilization technology
Nutrition
Product quality control
Information and service to the industry

7. Working Facilities

The institute has laboratories for analytical chemistry, microbiology, biochemistry, protein and lipid chemistry and miscellaneous scientific and technological studies, a pilot plant, a library and an experimental farm

8. Professional Staff

G. Sand	Managing Director
N. Ordahl	Head, processing/engineering
S. Eikje	Environmental protection
A. Hjelde	Microbiology
T. Larsen	Microbiology
E. Tidemann	Chemical engineering
E. Ellertsen	Chemical engineering
M. Lie	Raw material/preservation
E. Nygaard	Fat chemistry
S. Olsen	Head, analytical chemistry
A. Erodin	Analyst
J. Opstvedt	Head, products and nutrition
T. Gjefsen	Animal nutrition
H. Mundheim	Animal nutrition
G. Sobstad	Biochemistry
P. Hansen	Analytical chemistry
M. Arefjord	Head, quality control
E. Ellingsen	Inspector, quality control
E. Arnesen	Consultant/engineering
P. Lohne	Senior Adviser/information
J. Midtsaeter	Adviser/instrumentation

9. Assistants

30

10. Programme

Enzymatic and bacterial decomposition of fish
Bulk handling and preservation of fish
Processing of fishmeal and oil
Pollution control
Fat chemistry and technology
Instrumentation and automation
Nutrition studies with poultry, pigs and calves
Engineering and plant design
Product development
Product quality control

11. Training Activities

Short courses and meetings for people working in the Norwegian fishmeal industry
Practical training of laboratory technicians from the industry

12. Serial Publications

Meldinger fra SSF
Litteraturoversikt

NORWAY

RESEARCH LABORATORY OF THE NORWEGIAN CANNING INDUSTRY

1. Address

P.O. Box 68
4001 Stavanger
Norway

Tel: 045 29044
Cable: LABORATORIET
Telex: 33180 HERMEN

2. Director

Svenn Rasch Research Manager

3. Responsible Authority

Norwegian Canners Association, The Royal Norwegian Fisheries Department

4. Source of Finance

Canners Association 50%
Governmental Research Council, funds for special project 50%

5. Foundation Date

1931

6. Major Fields of Interest

The Institute specializes in development of fish utilization technology especially applied to canning

7. Working Facilities

Chemical, product development and microbiological laboratories, pilot plant and workshop

8. Professional Staff

Svenn Rasch	Research Manager
R. Ragaard	Chemistry and Product Development
K.H. Skramstad	Biochemistry and Bacteriology
J. Hviding	Machinery
9 other people	Analytical Chemistry, Biochemistry, Bacteriology, Food Technology, Mechanical and Electronics Engineering, Packaging

9. Assistants

15

10. Programme

Analytical development
Food for human consumption developed from unutilized resources
Development of minced fish technology
Short-term product development requested by Norwegian canning Industry
Food additives
Investigation of new packaging materials
Studies on sterilization of foods
Fish preservation in general
Development of new machines and processes
Planning of factories and freezer ships
Consultation work for the canning industry
In the future:
New preservation methods for use on the fishing vessel
Product development from unutilized resources
Pollution control

11. Training Activities

The Institute, in cooperation with other canning institutions, gives training to the canning industry in:
operation of machinery, food processing, process calculation, plant sanitation and initiating processing of new products

12. Serial Publications

Annual reports(in Norwegian)

NORWAY

THE OFFICIAL NORWEGIAN QUALITY CONTROL INSTITUTE FOR CANNED FISH PRODUCTS

1. Address

P.O. Box 329
N-4001 Stavanger
Norway

Tel: 045 29044
Telex: 33180 HERMEN

2. Director

O.C. Sundsvold

3. Responsible Authority

Royal Ministry of Fisheries

4. Source of Finance

Levies on exports and domestic sales of canned semi-preserved products

5. Foundation Date

1953

6. Major Fields of Interest

Fish quality control
Analytical development
Fish utilization technology

7. Working Facilities

The five departments are listed below:
Chemical Department
Inspection Department
Bacteriological Department
Packaging Material Department
Statistics Department

8. Professional Staff

O.C. Sundsvold	Managing Director
B. Uppstad	Analytical chemistry - Laboratory Manager
J. Jakobsson	Packing materials
T. Olsen	Head of the office and Statistics Department
9 Inspectors	

9. Assistants

11

10. Programme

Quality control service to the Norwegian canning industry

12. Serial Publications

Internal reports to the industry
Annual reports

NORWAY

SINTEF(THE FOUNDATION OF SCIENTIFIC AND INDUSTRIAL RESEARCH OF THE UNIVERSITY OF TRONDHEIM)

1. Address

7034 Trondheim - NTH
Norway

Tel: 075 93000
Telex: 55186 NTHB N. SINTEF

2. Director

Dr. Techn. J. Moe

3. Responsible Authority

SINTEF is a self-owned, self-governed and independent research organization

4. Source of Finance

Income from research and development undertaken for customers

5. Foundation Date

1950

6. Major Fields of Interest

Chemistry, Electronics, Automatic Control, Hydrotechnology, Corrosion, Computing

7. Working Facilities

The SINTEF personnel work in close cooperation with the academic staff of the University, sharing laboratory space and equipment University personnel according to clearance agreements may be employed in SINTEF research projects, whereas on the other hand SINTEF personnel take part in the University's educational programmes

8. Professional Staff

750 Total staff
400 with University degrees
Staff is divided on 17 divisions of which the Chemistry division, the Automatic Control division and the Industrial Projecting Division partly undertake projects concerning food and resources utilization

10. Programme

Enzymatic and bacterial decomposition of fish and meat
Biochemical engineering. (Proteins). Thaw-drying fish and meat (Dried foods)
Interpreting fish communication signals and navigation
Storing living fish in fjords for recatch when and where desirable

NORWAY

THE INSTITUTE OF FISHERY TECHNOLOGY RESEARCH

1. Address

P.O. Box 1159
9001 Tromsoe
Norway

Tel: 083 86586

2. Director

Terje Stroem

3. Responsible Authority

The Norwegian Council for Fishery Research (NFFR)

4. Source of Finance

Government

5. Foundation Date

1973

6. Major Fields of Interest

Fishing gear and vessels
Fish utilization technology

7. Working Facilities

General analytical and microbiological laboratories and pilot plant, computer installation for laboratory and processing automation development

8. Professional Staff

A. Endal	Head of Vessel Division
O.V. Karlsen	Information
S. Olsen	Head of Division of Fishing Gear and Methods (Bergen)
Division of Fish Processing:	
T. Stroem	Head of Fish Processing Division
H. Adolfsen	Preservation
A. Gildberg	Biochemistry
G. Gundersen	Automation and process control
B. Stormo	Processing
M.K. Sorensen	Biochemistry
W. Tangstad	Processing

(Staff being increased)

9. Assistants

8 (Division of Fish Processing)

10. Programme

Utilization of capelin; integrated research programme
Utilization of by-products, integrated research programme
Fish processing automation

12. Serial Publications

Annual reports

PANAMA

DIRECCION GENERAL DE RECURSOS

1. Address

Recursos Marinos
Apartado 3318
Zona 4
Panama

2. Director

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3. Responsible Authority

Ministerio de Comercio y Industrias

4. Source of Finance

State budget

6. Major Fields of Interest

Processing of by-products

7. Working Facilities

Analytical laboratory

10. Programme

Pilot plant for processing and conversion of by-products

11. Training Activities

Jointly with the Universidad de Panama executes fishermen's training programmes for small-scale fisheries

PHILIPPINES

BUREAU OF FISHERIES AND AQUATIC RESOURCES

1. Address

860 Quezon Avenue
Quezon City
Metro Manila

2. Director

Felix R.Gonzales

3. Responsible Authority

Bureau of Fisheries and Aquatic Resources

4. Source of Finance

Government Funds

5. Foundation Date

1947

6. Major Fields of Interest

Fishery Biology
Fish Utilization Technology
Fish Quality Control
Extension Work
Training

7. Working Facilities

The Bureau has laboratories, a library and pilot plant. In addition, it also operates a research vessel and two fish carriers with refrigerated fish holds and five other fishing vessels used for training of master fishermen and exploratory fishing

8. Professional Staff

Gloria Guevarra	Research Supervisor
Anselma S.Legaspi	Research Supervisor
Rosario Rustia	Fish Utilization Technology
Emma Marfori	Fish Utilization Technology
Flor Abella	Fish Utilization Technology
Victor Abulon	Extension Demonstration and Training
Modesta Angeles	Extension Demonstration and Training
Purita de la Pena	Chemical Investigations
Fe Dionido	Microbiological Investigations
Josefina Santos	Quality control, fish inspection
Julita Pascual	Quality control, fish inspection
Paciencia Figueroa	Extension and demonstration on processing

9. Assistants

11

10. Programme

Improvement of fish handling and storage practices
Development and standardization of new products and improvement of traditional products
Utilization of minor aquatic products particularly shellfish, seaweeds and squids
Pilot scale production of experimentally proven products
Fish quality control and fish inspection, chemical and microbiological studies and fishery products
Extension services on fish and fishery products utilization
In the future, attention will be given to:
Utilization of cheap species of fish and offal
Fish flour technology
Packaging
Studies on the use of refrigerated seawater
Determination of mercury content in tuna
Product development for export
Standardization of products of the fish industry

11. Training Activities

Training programmes - upon request of interested parties
Facilities available - fish processing equipment
Practical-in-industry training of students of different fishery schools and universities
Orientation and on-the-job training of employees

12. Serial Publications

Fisheries Newsletter

PHILIPPINES

COLLEGE OF FISHERIES

1. Address

Department of Fisheries Technology
College of Fisheries
University of the Philippines
Diliman, Quezon City 3004
The Philippines

Tel: 997386
Cable: UNIVERPHIL

2. Director

Dr. Patricia T.Arroyo

3. Responsible Authority

University of the Philippines

4. Source of Finance

Philippine Government Funds

5. Foundation Date

1958

6. Major Fields of Interest

Fish utilization technology
Fish quality control
Fish microbiology
Fish biochemistry

7. Working Facilities

The Department has a processing laboratory and a basic laboratory Access is available to the College and University libraries as well as to the research vessel of the College (MPV ALBACORE) which is equipped with freezing facilities

8. Professional Staff

Patricia T.Arroyo	Fish processing, Biochemistry
Yvonne M.Chiu	Chemistry
Florentino A.Flores	Fish processing, Chemical analysis of of Fishery products
Gloria F.Labao	Microbiology, Chemical analysis of fishery products
Florian Magno-Orejana	Fish processing, Biochemistry
Marcelino Nieto	Fish and minor fishery products processing
Leonarda S.Mendoza	Fish processing, Plant management
Leonor M.Santos	Fish processing, Quality Control
Haidea T.Solidum	Fish processing, Refrigeration

9. Assistants

4

10. Programme

Product development and improvement of traditional products
Utilization of by-products of fish processing
Production and utilization of fish protein concentrate
Utilization of minor fishery products, e.g., algae, sea cucumber
Proximate analysis of local fish species

11. Training Activities

Degree Programme: B.S. in Fisheries, major in Fisheries Technology
Non-degree programme: Diploma in Fisheries, major in Fish Preservation
Extension work

POLAND

DEPARTMENT OF FOOD PRESERVATION TECHNOLOGY AND TECHNICAL MICROBIOLOGY

1. Address

80-952 Gdansk, Majakowskiego 11/13
P.O. Box 612
Poland

Tel: 471246
Telex: 051302

2. Director

Prof.Dr.Zdzislaw E. Sikorski

3. Responsible Authority

Technological University, Gdansk

4. Source of Finance

Ministry of Science, Higher Education and Technology

5. Foundation Date

1949

6. Major Fields of Interest

Changes of fish proteins due to storage and processing
Technology of fish utilization
Refrigeration, freezing, canning and smoking technology
Food microbiology

7. Working Facilities

Chemical, bio-chemical, microbiology, rheological and organoleptic laboratories; pilot plant facilities for refrigeration, freezing, drying, smoking and canning technology; access to most modern equipment for chemical and structural analysis and to chemical engineering facilities; very good library covering all aspects of chemistry and technology

8. Professional Staff

Z.E. Sikorski	Head of Department - Protein changes due to processing and storage, freezing technology and food preservation
W. Szczepula	Professor Emeritus - Food microbiology
J. Grabowska	Protein changes in fish utilization of krill
Z. Kowalska	Food microbiology and utilization of proteins from wastes
M. Pietrzyk	Smoking technology, fishmeal technology
Z. Ziemba	Canning technology
H. Ziminska	Sensory analysis, utilization of proteins from wastes
M. Sadowska	Food rheology, the role of collagen in food products
M. Waczk	Modification of functional properties of proteins
J. Kotodziejska	Protein changes due to freezing and storage
S. Kostuch	Protein changes due to freezing and storage
B. Borkowski	The role of collagen in food products

9. Assistants

8

10. Programme

Protein changes in frozen fish
Utilization of fishery by-products
Fish canning technology
Food microbiology, utilization of fish wastes
Smoking technology
Utilization of krill for food and other purposes

11. Training Activities

The Department is part of the Faculty of Chemistry and offers regular courses for the degree of Master of Science in Food Chemistry and Ph.D. in Food Chemistry. The teaching program includes the following courses: Unit operations and processes in the food industries, Food chemistry, Food analysis, Marine food technology, and Meat Science. Candidates with English, Russian or German speaking ability may be accepted

12. Serial Publications

All papers by the staff are published in Polish, English, and German journals. Yearly lists of publications are available on request

POLAND

INSTITUTE OF MARINE FOOD TECHNOLOGY, ACADEMY OF AGRICULTURE

1. Address

Kazimierza Krolewicza 3
71-550 Szczecin
Poland
Tel: 231061

2. Director

Prof. Edward Kolakowski

3. Responsible Authority

Ministry of Science, Higher Education and Technology, Warszawa
Central Board of Fisheries, Szczecin

4. Source of Finance

From the two above authorities

5. Foundation Date

1953

6. Major Fields of Interest

Fish utilization technology
Fish quality control
Preservation of fish
Fish hygiene and microbiology
Fish processing equipment
Analytical development

7. Working Facilities

The Institute has five sub-departments specializing in development research on fish utilization technology applied mainly to new products

8. Professional Staff

E. Kolakowski	Chief, Fish Processing Technology Department
L. Stodolnik	Chief, Fish Preservation Department Lipid changes in frozen fish
S. Zaleski	Chief, Fish Microbiology
A. Chodyniecki	Chief, Hygiene and Fish Industry Department
T. Kawka	Chief, Processing Equipment Department
M. Pik	Enzymes in fish processing
A. Kolakowska	Rancidity in fish and fish products
M. Salacki	Processing of fish roe
J. Swiniarska	Protein changes in frozen fish
K. Sobolewska-Ceronik	Thermal resistance of non-sporing bacteria and bacterial spores in fish products
E. Ceronik	Evaluation of safe heat processing in fish canning
M. Kurpios	Pesticides in fish
M. Protasowicki	Heavy metals in fish and fish products
L. Gajowiecki	Protein additives in fish products
T. Seidler	Influence of thermal treatment on nutritive value of fish
K. Lachowicz	Rheology of fish products
B. Zanycki	Freezing of fish
S. Iwaszkiewicz	Macro and microelements in fish and fish products

9. Assistants

43

10. Programme

Development of new fish products from minced meat
New methods in fish freezing and thawing
Application of enzymes in fish processing
New methods in salting of fish
Chemical methods for quality of fish and fish products
Application of natural antioxidants in the fish industry
Determination of heavy metal and pesticides in fish and fish products
Hygiene in fish processing
Development of new equipment for fish processing

11. Training Activities

Five year academic courses leading to an M.Sc. are offered to Polish and foreign students. Further studies for D.Sc. can be undertaken
In cooperation with other specialist institutes professional training is given in the fish processing industry including pilot scale processing of new products

12. Serial Publications

Quarterly bulletin of the Institute

POLAND

SEA FISHERIES INSTITUTE

1. Address

81-345 Gdynia
Al. Zjednoczenia 1
Poland

Tel: 98 217021
Telex: 054348

2. Director

Doc. dr Bohdan Draganik

3. Responsible Authority

Fisheries Central Board - Szczecin

5. Foundation Date

1921

6. Major Fields of Interest

Fish technology
Mechanization of fish processing
Biochemistry of fish
Microbiology
Fish quality control
Processing of invertebrate including krill

7. Working Facilities

Eight laboratories, library, two pilot plants and workshops
Laboratories and pilot plants on two ocean going research vessels 'Prof. Siedlechi' /2800 GRT/ and 'Prof. Boguchi' /3100 GRT/

8. Professional Staff

P. Bykowski	Chief, Fish Processing Technology Department
D. Dutkiewicz	Chief, Mechanization of Fish Processing Dept.
J. Zalewski	Quality control, processing of invertebrate
J. Schwartz	Processing at sea, new products development Cephalopods processing
J. Pielichowski	Prechilling, freezing, processing of invertebrate
A. Wawerek	Salting of fish
J. Salmonowicz	Biochemistry, Fish meals and lipids
J. Kochanowski	Microbiology
W. Neugebauer	Biochemistry of fish and invertebrate
W. Kolodziejski	Processing of invertebrate
B. Igielska	Biochemistry
H. Borowski	Biochemistry
W. Woloszyk	Mechanization of fish processing
B. Bieniecki	Mechanization, processing at sea
P. Polujanowski	Fish meal production and automatization of processing
J. Duszenko	Construction of new machines for fish processing

9. Assistants

40

10. Programme

Utilization of new resources
Processing of invertebrates including krill
Enzymatic salting of non-traditional fish species
Development of minced fish products
Utilization of fresh water fishes
New product development

11. Training Activities

10 months(except July and August)
Training in the Institute's laboratories
Training on research vessels/pilot plant and biochemical laboratory
Agreements with Gdansk Polytechnic or Academy of Agriculture

12. Serial Publications

PRACE MIR(Reports of the Sea Fisheries Institute-series B)
Studia i Materialy
Biuletyn MIR
Technological notes

PORTUGAL

INSTITUTO PORTUGUES DE CONSERVAS DE PEIXE

1. Address

Avenida 24 de Julho
n.76
Lisbon
Portugal

2. Director

Dr. Luis Matias Torres

3. Responsible Authority

Secretary of State for Fisheries

4. Source of Finance

Government

5. Foundation Date

1936

6. Major Fields of Interest

Fish utilization technology
Fish quality control

7. Working Facilities

Laboratories equipped for analyses of fish, fish meal, edible oils, salt and cans
Pilot plants for fish preservation-refrigeration, freezing, processing of anchovy and canning
Library

8. Professional Staff

M.T. Alvaro	Fish technology and analysis
T.C. Florencio	Testing of cans and packaging materials
A.S. Lopes	Atomic absorption spectromorphology
M.I. Navas	Edible oil analyses, Gas liquid chromatography
L.P. Galvao	Bacteriology

9. Assistants

10

10. Programme

Fish preservation
Frozen fish
Fish meal
Dried fish
Edible fish
Packaging

11. Training Activities

No programme in this field

MARINE RESEARCH CENTRE, JEDDAH

1. Address

   Marine Research Centre
   P.O. Box 2580
   Jeddah
   Saudi Arabia

2. Director

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3. Responsible Authority

   Ministry of Agriculture and Water

4. Source of Finance

   Government

5. Foundation Date

   1970

6. Major Fields of Interest

   Fishery biology
   Fish utilization technology
   Fish quality control

7. Working Facilities

   The centre has laboratories for fishery biology, invertebrate study and chemistry. There is also a small library and a research trawler for shrimp

8. Professional Staff

S. Ragab	Technologist
A. Nawab	Trainee

9. Assistants

   3

10. Programme

    Storage experiments
    Improvements of fish-drying methods
    Experiments on canning of marine products

11. Training Activities

    Training courses include lectures in: marine environment, commercial fisheries and training on board the research vessel in fishery biology, fish handling and preservation
    The training area includes the coast of the Red Sea and Arabian Gulf

12. Serial Publications

    Bull.Mar.Res.Centre, Jeddah

SENEGAL

FOOD TECHNOLOGY INSTITUTE

1. Address

B.P. 2765
Dakar
Senegal

2. Director

Mme Basse

3. Responsible Authority

Delegation generale a la recherche scientifique et technique (Science and Technology Research Agency)
Government budget

5. Foundation Date

1963 (Fisheries Section, since 1973)

6. Major Fields of Interest

Technology of fish utilization
Fish quality control

7. Working Facilities

Two laboratories (chemistry and microbiology)
A pilot plant to handle 1 ton of fish per day is under construction

8. Professional Staff

Sall	Chemist, Chief of the Fisheries Products Processing Section

9. Assistants

2

10. Programme

Fish curing by usual techniques (smoking, salting, drying)
Preparing of fish recipes suiting the taste of the population
Testing the mercury content of fisheries products

SINGAPORE

MARINE FISHERIES RESEARCH DEPARTMENT (MFRD)
SOUTHEAST ASIAN FISHERIES DEVELOPMENT CENTER (SEAFDEC)

1. Address

Marine Fisheries Research Department
Southeast Asian Fisheries
Development Center
Changi Fisheries Complex
Changi Point
Singapore 1749
Republic of Singapore

Tel: 5451592
Cable: SEAFDEC-SINGAPORE

2. Director

Hooi Kok Kuang

3. Responsible Authority

SEAFDEC Council

4. Source of Finance

Singapore, Japan, other member countries and interested donor countries and funding agencies

5. Foundation Date

1969 (MFRD)
1976 (Fishery post harvest technology)

6. Major Fields of Interest

Development of fishery post-harvest technology for member countries in the region

7. Working Facilities

Chemistry, microbiology and processing laboratories
Other facilities include a low temperature room, blast freezer and cold storage
Developing facilities for a pilot fish processing plant
Library

8. Professional Staff

I. Tanaka	Deputy Director, MFRD
Tan Sen Min	Scientific staff
T. Fujiwara	Scientific staff
I. Yamashita	Scientific staff
Poon Kum Heng	Scientific staff
Lim Cheong Huat	Scientific staff
Lim Pang Yong	Scientific staff
Ng Hui Chng	Scientific staff
Tan Cheng Ean	Scientific staff

9. Assistants

5

10. Programme

The programme is directed towards optimum utilisation and minimum wastage of available fish resources, including utilisation of low market value fish for human consumption, preservation studies of frozen minced meat and products, research on development of comminuted and traditional fish products, quality assessment of fish and fish products, and wet fish handling

11. Training Activities

Long-term research training in various fields of fish technology
Short-term practical training courses on fish processing technology
Transfer of fish processing technology to industry in the region

12. Serial Publications

Annual reports, technical reports and SEAFDEC Newsletters

SINGAPORE

PRIMARY PRODUCTION DEPARTMENT
VETERINARY PUBLIC HEALTH AND MEAT TECHNOLOGY LABORATORY

1. Address

51 Jalan Burch
Singapore 22
Singapore

Tel: 650622
Cable: AGRIVET SINGAPORE

2. Director

Dr. Siew Teck Woh

3. Responsible Authority

Director of Primary Production, Singapore

4. Source of Finance

Government

5. Foundation Date

1970

6. Major Fields of Interest

Fish quality control
Fish utilization technology

7. Working Facilities

Chemistry and microbiology laboratory
Meat technology pilot plant

8. Professional Staff

Chua Sin Bin	Veterinary Food Hygiene-Microbiology of Fishery Products
Yeo Wee Khiang	Fish Technology-Fish Processing
Chio Kian Sai	Chemistry, Food Technology-Analytical Chemistry Food Processing

9. Assistants

3

10. Programme

Microbiological quality of fishery products
Processing of fish sausages

SOUTH AFRICA

FISHING INDUSTRY RESEARCH INSTITUTE (FIRI)

1. Address

Fishing Industry Research Institute
Private Bag,
Rondebosch 7700
South Africa

Tel: 699341
Telex: 57-0233SA
Cable: FIRILAB CAPETOWN

2. Director

Dr. R.J. Nachenius

3. Responsible Authority

Board of Control of FIRI

4. Source of Finance

South African Council for Scientific and Industrial Research
Fishing Industry
Fisheries Development Corporation

5. Foundation Date

1946

6. Major Fields of Interest

Fish utilization technology
Fish quality control
Fishery biology

7. Working Facilities

The Institute has comprehensive research facilities including library and laboratories for engineering, chemistry, microbiology, food technology, chicken growth studies and zoology

8. Professional Staff

R.J. Nachenius	Mechanical Engineer
J.P.H. Wessels	Nutritionist
A.A. Spark	Chemist
I.M. Moodie	Chemist
A.M. Atkinson	Home Economics
C.K. Simmonds	Chemist
L. Sandler	Chemist
E.C. Lamprecht	Microbiologist
V.G. Landgridge	Chemist
B.R. Lynch	Chemical Engineer
G.S. Collier	Chemist
B.J. Post	Chemist
I.L. Petrescu	Chemist

9. Assistants

14

10. Programme

Treatment of cannery and fish meal plant effluent
Fatty acid composition of fish oils (also hydrogenated)
The volatiles responsible for typical odours of processed fish
Gas chromatographic determination of amino acids
Processing factors that affect fish meal quality
Preservation of texture and flavour of frozen hake
Quality criteria of fresh and frozen fish
Electrophoretic identification of fish species

11. Training Activities

On limited scale and by mutual arrangement some training of factory laboratory personnel, by arrangement with factory managers or with the fishing industry

12. Serial Publications

Annual Report

SPAIN

CENTRO EXPERIMENTAL DEL FRIO

1. Address

Centro Experimental del Frio
Ciudad Universitaria
Madrid 3
Spain

Tel: 4493626/4496162

2. Director

Dr. Ing. Manuel Estada Giranta

3. Responsible Authority

Spanish Government

4. Source of Finance

Government and contracts from industry

5. Foundation Date

1951

6. Major Fields of Interest

Fish utilization technology
Quality control

7. Working Facilities

The Centre has four laboratories, a library and a well equipped pilot plant for freezing. In addition two research vessels can be used for work on freezing at sea

8. Professional Staff

J.A. Munoz-Delgado	Vice Director
E.A. Garcia Matamoros	Technologist
A. Moral	Technologist
J. Borderias	Technologist

10. Programme

Research on the application of refrigeration in the fishing industry
Optimization of frozen fish production

11. Training Activities

A four month course is given each year in engineering aspects of the application of refrigeration

SPAIN

INSTITUTO DE INVESTIGACIONES PESQUERAS

1. Address

Instituto de Investigaciones Pesqueras
Paseo Nacional S/n
Barcelona 3
Spain

Tel: 3106450/3194328

2. Director

Dr. Buenaventura Andrea Morero

3. Responsible Authority

Consejo Superior de Investigaciones Cientifica

4. Source of Finance

Government

5. Foundation Date

1949

6. Major Fields of Interest

Applied research in fish utilization technology
Fisheries
Aquaculture, Contamination

7. Working Facilities

The Institute has 5 laboratories (Barcelona, Blanes, Cadiz, Castellon and Vigo) with libraries, a pilot plant for fish processing, a pilot plant for Aquaculture and research vessels

8. Professional Staff

M. Lopez-Benito	Processing technology
L. Pastoriza	Quality determination
M. Gil	Fish protein concentrate and drying of fish
M. Gallardo	Processing technology
R. Establier	Fermentation of anchovy

9. Assistants

4

10. Programme

Product development from low priced species
Product development of canned fish pastes and mackerel
Quality determination
Drying of fish
Fish protein concentrate
Fermentation and production of marinades

11. Training Activities

Training is provided in the Institute for holders of scholarships

12. Serial Publications

Informes Tecnicos del Instituto de Investigaciones Pesqueras

SRI LANKA

INSTITUTE OF FISH TECHNOLOGY

1. Address

Fisheries Complex
Mattakkuliya
Colombo 15
Sri Lanka

2. Director

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3. Responsible Authority

Ministry of Fisheries, Government of Sri Lanka

4. Source of Finance

Government of Sri Lanka, FAO Trust Fund from Swedish International Development Agency

5. Foundation Date

1978 (Buildings and recruitment of local staff completed; work programme started)

6. Major Fields of Interest

Fish handling (chilling, freezing); Fish processing (dried products, salted products, fish meal & silage); Fish marketing (local distribution and exports); Extension services (information and demonstration)

7. Working Facilities

Laboratories (Chemical, Microbiological, Fisheries), Pilot Plant Hall, Experimental Kitchen, Taste Panel Room, Fish Smoking and Drying Room, Drying Yard, Workshop, Library and Office, Motor Van, Car and Jeep

8. Professional Staff

K.M. Jayawardene	Quality Control Officer
I.S.R. Goonewardene	Microbiologist
M.M. Chiniwasagam	Microbiologist
V. Jayaweera	Food Technologist
(Vacant)	Food Technolgist
(Vacant)	Chemist
(Vacant)	Chemist
W.A.D. Jinadasa	Mechanical Engineer
W.T.Y. Perera	Marketing Officer

9. Assistants

5 Laboratory Assistants, 1 Mechanic

10. Programme

Storage life in ice of species of fish
Use of insulated and/or refrigerated containers for storage of wet fish, design of improved fish boxes and containers for tranport of ice
Utilization of low value fish for preparation of new products eg fish biscuits, fish sausage. Utilization of fish waste and by-catch for production of fish silage and fish meal. Storage life and quality studies of dried fish
Assistance to processors of shrimps lobsters, beche-de-mer and shark fins for export

11. Training Activities

Extension services on fish utilization by demonstrations and seminars to outside staff in the industry

12. Serial Publications

Bulletin of the Fisheries Research Station (Annual)

TANZANIA

FRESHWATER FISHERIES INSTITUTE

1. Address

Freshwater Fisheries Institute
Nyegezi
P.O. Box 1213
Mwanza
Tanzania

2. Director

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3. Responsible Authority

Ministry of Natural Resources and Animal Production, Dar-es-Salaam

4. Source of Finance

Tanzanian Government and Netherland Government's Technical Aid

5. Foundation Date

1967

6. Major Fields of Interest

Fish utilization technology
Fish quality control
Fishing
Fishery Biology
Training
Aquaculture

7. Working Facilities

The Institute has microbiology, biology, processing laboratories with pilot plant, a fish meal pilot plant, 130 hp trawler and a small library

10. Programme

Improvement of traditional fish processing and adoption of modern techniques
Exploratory fishing
Pilot scale production of fish meal and FPC
Fish marketing survey
Fishery biology
Training
Microbiological studies in relation to quality control

11. Training Activities

Fish Processing) 3-month courses in these subjects are conducted for
Aquaculture) students enrolled in the 2-year diploma course of
Limnology) the Kunduchi Marine Fisheries Institute and the
) 2-year certificate course of the Mbegani Fisheries
) Institute

12. Serial Publications

Quarterly and Annual Reports
Scientific publications in other international journals

THAILAND

FISHERY TECHNOLOGY DEVELOPMENT DIVISION

1. Address

Department of Fisheries
Rajadamnern Avenue
Bangkok
Thailand

2. Director

Mrs. Bung-orn Saisithi

3. Responsible Authority

Government of Thailand

4. Source of Finance

Government Budget

5. Foundation Date

1955

6. Major Fields of Interest

Fish utilization technology
Fish quality control
Analytical and microbiological services
Product development and improvement of traditional products
Information and service to the industry

7. Working Facilities

Laboratory for chemistry, microbiology and quality control
Simple processing facilities
Pilot plant for smoking

8. Professional Staff

Bung-orn Saisithi	Fish Technologist, Chief of the Division
Udom Suntornvipat	Chemist, In charge of Fresh Fish Handling and Quality Control Section
Berngrudee Pruthiarenun	Home Economist, In charge of Fish Processing Section
Pongpen Rattagool	Microbiologist, In charge of Chemistry and Microbiology Section
Saengthai Potsompong	Food Technologist, In charge of Fish Process Engineering Section

10. Programme

Traditional and industrial processing and product development
Quality assessment, quality and process control, standards, fish inspection
Fish handling and preservation
Analytical and scientific research related to fish utilization
Utilization of species of low market value and processing waste
Diversification of processed fish products

11. Training Activities

No regular courses are offered
The laboratory facilities are occasionally used by students of the College of Fisheries
Extension programmes in fish processing

OCEANOGRAPHY RESEARCH CENTRE

1. Address

B.P. 1095
Lome
Togo

2. Director

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3. Responsible Authority

Ministere de l'Economie rurale

4. Source of Finance

State budget

5. Foundation Date

1972

6. Major Fields of Interest

Fisheries biology
Quality control

7. Working Facilities

Chemistry laboratory

8. Professional Staff

Addra	Biologist, Chief of Centre
Yabouri	Veterinarian, in charge of the Fish Quality Control Section

9. Assistants

4

10. Programme

Research on fish pests and parasites
Research on psychrophilic micro-organisms
Statistics of marine fisheries in Togo
Development of freshwater species

11. Training Activities

Courses in oceanography and sanitary inspection

TUNISIA

INSTITUT NATIONAL SCIENTIFIQUE ET TECHNIQUE D'OCEANOGRAPHIE ET DE PECHE

1. Address

Tel: 275632/276364/276522

INSTOP
Salammbo
Tunisia

2. Director

Mrs. Founoun Ktari

3. Responsible Authority

Ministere de l'Agriculture

4. Source of Finance

State budget

5. Foundation Date

1924

6. Major Fields of Interest

Basic research and applied research in the fisheries field
Fish technoloy
Aquaculture
Marine pollution

7. Working Facilities

22 laboratories
2 research vessels
Library
Fish ponds

8. Professional Staff

Total INSTOP : 14
Technology laboratory : 1

9. Assistants

Total INSTOP : 15
Technology Laboratory : 1

10. Programme

Pollution
Biochemistry of fish and marine products
Fish ponds: quality control of marine shellfish

11. Training Activities

Participation in the teaching work of the Institut National Agronomique de Tunisie (National Agricultural Institute of Tunisia)
Fisheries Section

12. Serial Publications

Bulletin de l'Institut National Scientifique et Technique d'Oceanographie et de Peche de Salammbo (annual)

U.K.

TORRY RESEARCH STATION

1. Address

P.O. Box 31
135 Abbey Road
Aberdeen AB9 8DG
U.K.

Tel: 0224 877071
Telex : 73587 prefix message FOR TRS

2. Director

Dr.J.J. Connell

3. Responsible Authority

U.K. Ministry of Agriculture, Fisheries and Food

4. Source of Finance

U.K. Government

5. Foundation Date

1929

6. Major Fields of Interest

Fish utilization technology
Pollution
National collections of industrial and marine bacteria

7. Working Facilities

Pilot plant - fish meal, freezing, drying, thawing, smoking, canning, cold storage
Research vessel
Library and documentation service
Much specialized equipment, e.g., mass spectrometer, electron microscopes

8. Professional Staff

66 Physics
Chemistry
Biochemistry
Microbiology
Statistics
Engineering

9. Assistants

28

10. Programme

The Torry Research Station has a comprehensive programme of fish technology research with emphasis on the application of science and engineering to the problems of fish handling and processing in the United Kingdom fishing industry

11. Training Activities

One 1-week course/year in principles of fish handling and processing technology, usually spring; up to 50 participants from industry and management
Some training in industry on repayment, e.g., taste panel training
Acceptance of small numbers of Ph.D. students, sandwich students, vacation students and voluntary workers from overseas

12. Serial Publications

Advisory Notes
Annual Reports

U.K.

TROPICAL PRODUCTS INSTITUTE

1. Address

Tropical Products Institute
56-62 Grays Inn Road
London WC1X 8LU
U.K.

Tel: 01 2425412
Cable: TROPODS LONDON

2. Director

Dr. P.C. Spensley

3. Responsible Authority

Overseas Development Administration

4. Source of Finance

Overseas Development Administration

5. Foundation Date

1894

6. Major Fields of Interest

Fish utilization technology	- 65%
Marketing	- 15%
Fish quality control	- 10%
Training	- 10%

7. Working Facilities

In the Institute, two laboratories are devoted to fish research; these are backed up by comprehensive library and workshop facilities. Pilot plant is also available. In addition, there are overseas projects in Malawi, Seychelles, Malaysia and Mexico
The fish research group has access to the other facilities of the Institute, including economic studies, statistics and microbiological analysis

8. Professional Staff

M.R. Jones	Deputy Director, TPI
J. Disney	Section Leader
R.C. Cole	Scientific Staff
A. Hoffman	Scientific Staff
J. Rogers	Scientific Staff
I. Clucas	Scientific Staff
P. Haines	Marketing Economist
R.G. Poulter	Seconded to IFT Sri Lanka
J.R. Shaw	Marketing Economist
J.M.K. Bell	Marketing Economist
A. Jones	Marketing Economist

9. Assistants

3 Supporting Staff, plus occasional student workers

10. Programme

Short and long term overseas projects on fish processing and marketing
Development of simple preservation processes for tropical fish
The development of improved methods of fish smoking in the tropics
The prevention of waste - development of novel products for the utilization of waste fish
Articles on problems associated with the development of fisheries in tropical countries

11. Training Activities

Practical training in the technologies of fish handling and preservation (except fishmeal production) can be given at the Institute to a maximum of two people, at any time
Special courses can be arranged for larger numbers
Laboratory and pilot scale facilities are available, and on-the-job training in industry can be organized
Training is arranged via the British Council, and all students must have a proficiency test in English prior to acceptance

12. Serial Publications

Tropical Science (quarterly journal)

U.K.

WHITE FISH AUTHORITY

1. Address

Headquarters
Sea Fisheries House
10 Young Street
Edinburgh EH2 4JQ

Tel: 031 2252513
Telex: 727225

Industrial Development Unit
St. Andrew's Dock
Hull HU3 4QE
North Humberside

Tel: 0482 27837
Telex: 527261

2. Director

C.I. Meek	Chairman
R. Bennett	Technical Director

3. Responsible Authority

U.K. Ministry of Agriculture, Fisheries and Food

4. Source of Finance

General levy on Industry
Special levies
Loans from the Ministers
Interest on loans
Grants from the Ministers

5. Foundation Date

1951

6. Major Fields of Interest

Administration of a Grant and Loan Scheme
Research and development
Training and dissemination of information
Publicity and promotion
Consultancy services

7. Working Facilities

Electronic and mechanical engineering workshops
Computer complex and associated cartographic facilities
Training centre and flume tank
Mobile training unit
Experimental marine fish farms
Technical information department
Use of fishing vessels for research and development

8. Professional Staff

P.J. Hearn	Project Manager
M. Hatfield	Chief Development Engineer
W. Siddle	Principal Mechanical Engineer
E. Allison	Principal Electronics Engineer
J.F. Foster	Principal Naval Architect
H.D.Mc Diarmid	Principal Fisheries Development Officer
K.H. Haywood	Principal Operations Research Officer
N.M. Kerr	Chief Technical Officer
K.T. Howard	Principal Marine Farming Officer
M.J. Urch	Senior Market Development Officer
J.F. Sinclair	Chief Marine Surveyor
D.A. Woodcock	Trade Officer
N.B. Mc Kellar	Economist
H. Beaver	Chief Information Officer

9. Assistants

152 Technical/professional
130 Administrative/clerical

10. Programme

The technical development programme includes:
Research into new or alternative fish stocks
Development of new and improved instruments, fishing methods and gear
Mechanization on board and performance trials on vessels and machinery
Application of operation techniques in fisheries, processing and distribution
Development and market assessment of new fish products and implementation of codes of practice for institutional caterers,

including advice on tendering for supplies
Marine fish farming

11. Training Activities

The MFA runs a number of short, specialized courses, based on modern training aids, including a flume tank, mobile training unit and fishing simulator. The courses currently available include:
Fishing gear technology for middle/distant water fishermen (5 days)
Fishing gear technology for inshore fishermen (5 days)
Fish finding echo sounders (5 days)
Sonar (3 days)
Care and maintenance in the engineroom (2.5 days)
Hydraulics for fishermen (2.5 days)
Fish handling and preservation at sea (3 days)
Marine science for fishermen (3 days)
Business management (3 days)
Fishing technology and management (12 weeks)
Marine fish hatchery production, mollusc rearing and fish rearing

12. Serial Publications

Annual Report
Supplies Bulletin
Fish Retailer Purchase Study
Fisheries Economic Newsletter
U.K. Imports and Exports of Fish and Fish Products
Estimated Total Frozen Stocks of White Fish in the U.K.
Occasional special reports and bulletins on the work of the MFA are also published

URUGUAY

INSTITUTO NACIONAL DE PESCA (INAPE)

1. Address

Instituto Nacional de Pesca (INAPE)
Constituyente 1497
Casilla de Correo 1612
Montevideo Uruguay

Tel: 417576/492777

2. Director

Capitan de Navio U.W. Perez

3. Responsible Authority

Ministerio de Agricultura y Pesca

4. Source of Finance

Ministerio de Agricultura y Pesca and payment by industry for work undertaken

5. Foundation Date

1975

6. Major Fields of Interest

Fish quality control, fish utilization technology, stock assessment and biology, fishery statistics

7. Working Facilities

Laboratories, library

8. Professional Staff

24 professionals and 33 technical assistants

9. Assistants

10 assistants

10. Programme

Guidance, advice, promotion, control and development of fishery activities in Uruguay

11. Training Activities

Training at industry level and assistance to teaching institutions
Participation in international meetings and seminars
Organization of meetings and symposium at country level

12. Serial Publications

Technical reports
Technical circulars
Statistical bulletins

U.S.A.

UNIVERSITY OF GEORGIA
FOOD SCIENCE DEPARTMENT

1. Address

University of Georgia
Food Science Department
Athens, GA 30602
U.S.A.

2. Director

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3. Responsible Authority

University of Georgia College of Agriculture
Experimental Stations

4. Source of Finance

Federal Government (Sea Grant Program)

6. Major Fields of Interest

Fish utilization and processing technology

7. Working Facilities

Pilot plant, machine shop for equipment fabrication, laboratories for analytical, microbiological and instrumental analysis

8. Professional Staff

R.T. Toledo	Associate Professor
D.A. Lillard	Associate Professor
C.H. Lee	Research Associate

9. Assistants

1 Technician
2 Graduate Students

10. Programme

Smokehouse technology, optimizing smokehouse schedules for maximal quality of smoked fish
Kinetics of changes that occur in fish proteins during mechanical deboning and chopping, and the effect of such changes on fat, water and particle to particle bonding in sausage type products
Effect of vegetable protein additives on textural and flavour characteristics of restructured fish products from shredded fish flesh
Microbiological and storage stability of processed fish products packaged in plastic films of varying oxygen permeability

11. Training Activities

B.S., M.S. and Ph.D. programmes in Food Science. Short courses and demonstration of processing techniques to commercial processors in the State

U.S.A.

UNIVERSITY OF GEORGIA
MARINE EXTENSION SERVICE

1. Address

Marine Extension Service
Bldg. No 1, South Yards
Brunswick, Georgia 31520
U.S.A.

2. Director

Dr. Edward Chin	Director of Sea Grant & Marine Science Programs, Athens
Dr. James L. Harding	Director, Marine Extension Service, Skidaway Island
Dr. Wayne A. Bough	Assoc. Director, Marine Extension Service, Brunswick

3. Responsible Authority

Marine Extension Service
Sea Grant Program
University of Georgia

4. Source of Finance

State of Georgia, National Sea Grant Program, other regional and federal agencies

5. Foundation Date

1970 Marine Extension Service
1971 Sea Grant Program

6. Major Fields of Interest

Seafood technology
Development of fish products for export
Waste management and pollution control
Sportfishing
Commercial fisheries, harvesting, gear development
Marine advisory assistance

7. Working Facilities

Seafood pilot plant, analytical laboratory for sanitation and wastewater analysis, waste treatment equipment. Shrimp trawler, 57 ft., R/V Captain Gene for gear development, demonstration, training and education. Electronic instrumentation, nets for shrimp, fish and crabs, and assorted gear for fisheries extension work

8. Professional Staff

Wayne A. Bough	Seafood technology, waste management
Arnold C. Wu	Seafood product development, food science
Joaquim (Jack) B. Rivers	Commercial fisheries, finfish harvesting
David L. Harrington	Commercial fisheries, advisory services
Fred Lyda	Economics, management
J. Owens Smith	Marine law, coastal zone management

10. Programme

Development of twin trawl fishing techniques
Harvesting and gear for finfish species
Development of rock shrimp and sea bass fishery
Advisory assistance to fisheries and seafood industry
Seafood product development
Manufacture of export products from underutilized species
Development of on-board handling practices for seafood
Reduction of seafood wastes loads by in-plant modifications
Utilization of seafood wastes for manufacture of by-products
Manufacturing of chitosan and uses as a coagulating agent for waste treatment from food processing plants

11. Training Activities

On-board training in fishing techniques, use of gear, and navigational equipment. Workshops on twin trawl techniques, crabbing, eeling, and finfish harvesting. Training seminars, and field exercises in seafood waste management, and inspection of seafood products. Sportfishing clinics. Workshops on investments,

U.S.A.

taxes, and financial management

12. Serial Publications

Marine Extension Bulletin

U.S.A.

SEA GRANT PROGRAM
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

1. Address

Sea Grant Program
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061
U.S.A.

Tel: 804 9516965

2. Director

George J. Flick

3. Responsible Authority

Virginia Polytechnic Institute and State University

4. Source of Finance

State of Virginia
Office of Sea Grant

5. Foundation Date

1971

6. Major Fields of Interest

Food Science and Technology
Engineering
Sociology
Economics
Educational materials

7. Working Facilities

Pilot plant, laboratories, kitchens in Blacksburg and Hampton, Virginia

8. Professional Staff

G.J. Flick	Food Science and Technology
D.R. Ward	Food Science and Technology
C.P. Shoemaker	Food Science and Technology
C.W. Coale	Agricultural Economics
D.L. Long	Agricultural Economics
S.S. Batie	Agricultural Economics
W.H. Washburn	Engineering
N.D. Satterthwaite	Information and Learning Services
D.J. Shoemaker	Sociology

10. Programme

Teaching, research and extension activities concerning marine resources

11. Training Activities

Formal graduate and undergraduate program
Continuing education program

12. Serial Publications

Virginia Marine Times

U.S.A.

U.S. DEPARTMENT OF COMMERCE
NATIONAL MARINE FISHERIES SERVICE
SOUTHEAST FISHERIES CENTER
CHARLESTON LABORATORY

1. Address

P.O. Box 12607
Charleston, SC 29412
U.S.A.

Tel: 803 7244773
Telex: FTS 677-4773

2. Director

Mr. Harry L. Seagran

3. Responsible Authority

National Marine Fisheries Service, NOAA
U.S. Department of Commerce

4. Source of Finance

Federal Government

5. Foundation Date

Approximately 1940 (in Maryland)

6. Major Fields of Interest

Fish processing and utilization technology (underutilized species)
Product quality and safety (chemical and microbiological)
Nutritional values of fishery products (animal and human)
Aquaculture (crustacean nutrition)

7. Working Facilities

Food research labs and test kitchen
Chemistry labs
Microbiological labs
Animal labs (chick, rat, crustacean)
Library
Pilot plant

8. Professional Staff

H.L. Seagran	Physical Science Administrator
M.E. Marvin	Supervisory Program Analyst
J.A. Babinchak	Research Microbiologist
P.E. Bauersfeld, Jr.	Supv. Research Animal Husbandman
S.M. Bingham	Computer Specialist
S.A. Braddon	Research Chemist
I.T. Calica	Chemist
R. Cummins, Jr.	Fishery Biologist
J.C. Devane, Jr.	Fishery Reporting Specialist
P.E. Eldridge	Fishery Biologist
R.C. Ernst, Jr.	Chemical Engineer
P.A. Fair	Fishery Biologist
A.R. Fortner	Chemist
D. Goldmintz	Research Microbiologist
M.B. Hale	Supv. Research Chemical Engineer
J.D. Joseph	Research Chemist
G.M. Meaburn	Supv. Research Chemist
M.R. Millikin	Fishery Biologist
L. Ng	Math Statistician
L.W. Regier	Supv. Research Food Technologist
G.P. Richards	Research Microbiologist
R.E. Roberts	Chemist
M. Sanders	Supv. Research Chemist
L.V. Sick	Supv. Research Biologist
T.C. Siewicki	Research Animal Husbandman
D.H. Telander, Jr.	Research Chemist
M.E. Waters	Research Food Technologist
V.A. Young	Chemist

9. Assistants

8 technicians
6 technical aids
10 others

10. Programme

Microconstituents/Contaminants (organic and trace elements) of potential public health significance in the marine resource, food products and sea water, and an evaluation of their interrelashionships to toxicity

U.S.A.

Utilization technology of underutilized latent marine species of the Southeast U.S. coastal waters: processing, handling, storageability, oxidative rancidity and microbiology of fish and shellfish including various pathological microbiological factors
Industrial product development and evaluation. Composition and nutritional value of fishery products. Aquaculture/nutritional requirements of crustaceans (macrobrachium)

11. Training Activities

No formal training program exists. Special arrangements have been made in the past with governmental agencies, and universities

12. Serial Publications

The laboratory's publications generally appear in appropriate scientific journals and sometimes in government publications such as Marine Fisheries Review, Fisheries Bulletin

U.S.A.

TEXAS A & M UNIVERSITY

1. Address

Seafood Technology
Department of Animal Science
Texas A & M University
College Station
Texas
U.S.A.

2. Director

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3. Responsible Authority

State of Texas

4. Source of Finance

State Funds
Sea Grant
U.S. Food and Drug Administration
Commercial Industries

5. Foundation Date

1875

6. Major Fields of Interest

Fish quality control
Fish utilization technology
Mariculture

7. Working Facilities

There are four research laboratories, a quality control and a processing laboratory plus an extensive library

8. Professional Staff

Gunnar Finne	Biochemist - Research and Teaching (Assistant Professor)
Carl Vanderzant	Microbiologist - Research and Teaching (Professor)
T.R. Dutson	Meat Chemist - Research and Teaching (Assistant Professor)
Ranzell Nickelson	Microbiologist - Research Extension, Seafood Activities
Dwayne Suter	Food Engineer - Research + Teaching

9. Assistants

2

10. Programme

Microbiological and biochemical problems causing loss of quality in shrimp and fish
Utilization of underutilized species
Development of minced fish technology
Fish packaging

11. Training Activities

Present training programmes mainly involve research but students have been placed in industries and on boats for training
Dr.R. Nickelson maintains an extensive quality control training programme for the industry. This includes in-plant and special training classes
B.S., M.S., Ph.D. in Food Science, Oceanography, Wildlife and Fisheries, Biology. A food Engineering programme is being developed

12. Serial Publications

Texas Trawler

U.S.A.

UNIVERSITY OF MARYLAND
CENTER FOR ENVIRONMENTAL AND ESTUARINE STUDIES
MARINE PRODUCTS LABORATORY

1. Address

University of Maryland
Center for Environmental and Estuarine Studies
Marine Products Laboratory
Lorie Quinn Sr. Drive
Box 351
Crisfield, Maryland 21817
U.S.A.

Tel: 301 9681655

2. Director

Dr. Joseph G. Hutch

3. Responsible Authority

University of Maryland, State of Maryland

4. Source of Finance

State of Maryland

5. Foundation Date

Seafood Processing Laboratory 1954
Marine Products Laboratory 1975

6. Major Fields of Interest

Fish and fish products utilization and technology
Marine and estuarine pharmacology
Marine algae utilization
Fish quality control
Seafood industry extension services

7. Working Facilities

Microbiological, biochemical, processing and testing laboratories
Boats
Library

8. Professional Staff

J.G. Hutch	Biologist/Geneticist - Director
M.W. Paparella	Food Technologist - Extension Agent
R.R. Cockey	Microbiologist
D.D. Boon	Chemist

9. Assistants

4

10. Programme

Genetics and breeding of selected marine and estuarine finfish and shellfish
Fish and fish products
Quality assessment
Pollution and environmental research
Establishment of suitable techniques for seafood processing, preservation, handling and distribution
Biochemistry of marine products and their utilization
Marine and estuarine pharmacology

11. Training Activities

No formal training programmes, but assistance provided to the seafood industry and student participation in research programmes

12. Serial Publications

Information Tips, a quarterly periodical

U.S.A.

UNIVERSITY OF FLORIDA
FOOD SCIENCE DEPARTMENT

1. Address

367 Food Science Building
Institute of Food and Agricultural Sciences
University of Florida
Gainesville, Florida 32611
U.S.A.

Tel: 904 3921993

2. Director

Dr. R.A. Dennison, Professor and Department Chairman

3. Responsible Authority

Vice President for Agricultural Affairs, University of Florida

4. Source of Finance

State of Florida

5. Foundation Date

1956

6. Major Fields of Interest

Fish utilization
Quality control
Product safety

7. Working Facilities

Pilot plant for product work
Laboratories for chemical, microbiological and residue studies

8. Professional Staff

J.C. Deng	Chemistry
J.A. Koburger	Microbiology

9. Assistants

4

10. Programme

Rancidity control in mullet
Processing and product development of underutilized species
Microbiological control

11. Training Activities

Graduate students

12. Serial Publications

Technical reports

U.S.A.

NEW YORK AGRICULTURAL EXPERIMENT STATION

1. Address

Geneva
New York 14456
U.S.A.

Tel: 315 7872011

2. Director

Donald W. Barton

3. Responsible Authority

Cornell University, State University of New York

4. Source of Finance

State, Federal, private

5. Foundation Date

1882

6. Major Fields of Interest

Fish utilization technology

7. Working Facilities

More than 100 laboratories
1 large pilot plant
1 large library, Cornell facilities also available

8. Professional Staff

R.S. Shallenberger	Professor of Biochemistry
M.G. Lindley	Post Doctoral Fellowship

10. Programme

Utilization of waste from surf clam processing

U.S.A.

U.S. DEPARTMENT OF COMMERCE
NATIONAL MARINE FISHERIES SERVICE, NOAA
NORTHEAST FISHERIES CENTER - GLOUCESTER LABORATORY

1. Address

Emerson Avenue
Gloucester, MA 01930
U.S.A.

Tel: 617 2813600

2. Director

Mr. L.J. Ronsivalli

3. Responsible Authority

National Marine Fisheries Service, NOAA
United States Department of Commerce

4. Source of Finance

Federal Government

5. Foundation Date

1871

6. Major Fields of Interest

Fish utilization technology
Fish quality control
Process hazards assessment
Quality standards

7. Working Facilities

Chemistry, Food Processing, Food Irradiation and Microbiology
Laboratories
2 Pilot plants
Library
Live fish holding facility
Test kitchen and taste panel rooms

8. Professional Staff

L.J. Ronsivalli	Supervisory General Physical Scientist
J.A. Peters	Supervisory General Physical Scientist
R.J. Learson	Supervisory Research Food Technology
J.T.R. Nickerson	Consultant Food Technologist
S.E. Charm	Consultant Food Engineer
C. Gorga	Consultant Economist
J.D. Kaylor	Supervisory Research Food Technology
J.J. Ryan	Supervisory Research Food Technologist
D.F. Gadbois	Supervisory Research Chemist
J.J. Licciardello	Supervisory Research Food Technologist
J.M. Mendelson	Research Food Technologist
F.J. King	Research Food Technologist
J.H. Carver	Research Food Technologist
J.G. Callan	Supervisory Mechanical Engineer
M.G. Corbett	Supervisory Mechnical Engineer
A.J. Blott	Mechanical Engineer
D.W. Baker	Mechancial Engineering Technician
J.M. Lee	Mechanical Engineering Technician
V.E. Nulk	Mechanical Engineering Technician
W.S. Hill	Research Food Technologist
T.J. Connors	Research Food Technologist
B.L. Tinker	Research Food Technologist
V.G. Ampola	Research Food Technologist
E.M. Ravesi	Research Chemist
J. Krzynowek	Research Chemist
R.S. Maney	Chemist
K.A. Wilhelm	Food Technologist
J.P. Lane	Research Food Technologist
R.C. Lundstrom	Food Technologist

10. Programme

Resource Development and Improvement
Product Quality and Safety
Product Safety and Standardization
Future research will be directed to:
Guaranteed Grade A quality to consumer
Microbiological quality of minced fish blocks
Fisheries utilization in Great Lakes
Species Identification

U.S.A.

11. Training Activities

Limited to 1-2 trainees - no scheduled programme
Processing and preservation technology, microbiology

U.S.A.

CORNELL UNIVERSITY
DEPARTMENT OF FOOD SCIENCE

1. Address

Department of Food Science
Cornell University
U.S.A.
Ithaca, New York 14835

2. Director

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3. Responsible Authority

New York State Sea Grant Institute

4. Source of Finance

New York State Sea Grant Institute

6. Major Fields of Interest

Fish utilization technology

7. Working Facilities

The Department has three chemical laboratories and a pilot plant

8. Professional Staff

L.F. Hood	Food Chemistry and product development - Project Leader
R.R. Zall	Quality control waste management - Project Leader

10. Programme

Convert clam wash water to marketable product

U.S.A.

CORNELL UNIVERSITY
INSTITUTE OF FOOD SCIENCE AND MARKETING

1. Address

112 Rice Hall
Cornell University
Ithaca, New York 14835
U.S.A.

Tel: 607 2562108

2. Director

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3. Responsible Authority

New York State Sea Grant

4. Source of Finance

New York State Sea Grant

6. Major Fields of Interest

Fish utilization tecnology
Fish quality control

7. Working Facilities

Analytical laboratory, Basic food research laboratory, microbiology laboratory, food preparation room and experimental kitchen
Access to large fully equipped pilot plant at Cornell and the Cornell University library system

8. Professional Staff

R.C. Baker	Food Scientist - Coinvestigator
J.M. Regenstein	Food Scientist
J.M. Darfler	Recipe formulation taste panel testing, Home Economist

9. Assistants

2

10. Programme

UTilization of filleting wastes from flounder for human and pet foods

12. Serial Publications

Coastlines New York States Sea Grant Program Newsletter
Development Products from Minced Fish - Booklet 1 (Seafood Chowders)
Development Products from Minced Fish - Bocklet 2 (Seafood Crispies)

U.S.A.

UNIVERSITY OF RHODE ISLAND

1. Address

Food Science Program (Interdepartmental)
Quinn Hall
Kingston
Rhode island
U.S.A.

2. Director

Dr. Spiros M. Constantinides

3. Responsible Authority

State of Rhode Island

4. Source of Finance

Sea Grant
International Center for Marine Resource Development

5. Foundation Date

1968

6. Major Fields of Interest

Fish utilization technology

7. Working Facilities

3 laboratories

8. Professional Staff

S. Barnett
J. Bergan
R. Coduri
C. Chichester
S. Constantinides
H. Dymsza
C. Houston
J. Hove
T. Lee
T. Meade
A. Rand
K. Simpson
G. Godwin
All involved in research and teaching

9. Assistants

24

10. Programme

Utilization of underutilized species
UTilization of waste from seafood industries
Enzyme systems in marine species
Improved artisanal fisheries in developing nations
Feed for aquaculture
Quality assessment of fish
Intermediate moisture foods
Shipboard processing and handling
Nutritional requirements of fish

11. Training Activities

B.S., M.S. and Ph.D. degrees in Food Science and Technology

U.S.A.

DEPARTMENT OF FOOD SCIENCE
NORTH CAROLINA STATE UNIVERSITY

1. Address

Seafood Program
Department of Food Science
North Carolina State University
P.O.B 5992
Raleigh
N.C. 27607
U.S.A.

Tel: 919 7372964

2. Director

Dr. N.B. Webb — Research
Dr. F.B. Thomas — Extension

3. Responsible Authority

Director, North Carolina Agricultural Experimental Station

4. Source of Finance

N.C. Agricultural Experimental Station
Sea Grant
PL 88-309
N.C. Department of Administration
Coastal Plains Regional Com.

5. Foundation Date

1964

6. Major Fields of Interest

Fish utilization tehnology
Fish quality control
Fish composition and safety

7. Working Facilities

Fish processing and utilization research laboratories with pilot plants at Raleigh Morehead City, N.C.

8. Professional Staff

N.B. Webb	Fish Processing - Full time research
F.B. Thomas	Fish Processing - Full time extension
T.M. Miller	Fish processing - two thirds extension, one third research

9. Assistants

Several technicians and graduate students

10. Programme

Fish deboning and utilization
Functional properties of fish muscle tissue and proteins
Effect of freezing on fish quality
Pilot processing of finfish
Texture of fish and crabmeat
Enzymatic activity of crabmeat
Crab plant sanitation
Handling of live crabs
Squid processing
Effects of processing on nutrient and chemical-microbial contaminant content of seafoods

11. Training Activities

Complete teaching research and extension facilities at Raleigh and the coastal laboratory (Morehead City)
Extension and demonstration programmes via extension specialists (3)
Food science degree programmes (B.S., M.S. and Ph.D.)
Marine science degree programmes (M.S. and Ph.D.)

12. Serial Publications

'University of North Carolina Sea Grant Program Newsletter' issued by:
U.N.C. Sea Grant Office
1235 Burlington Labs
N.C. State University
Raleigh, N.C. 27607

U.S.A.

INSTITUTE FOR FOOD SCIENCE AND TECHNOLOGY

1. Address

Institute for Food Science and Technology
College of Fisheries
University of Washington
Seattle, Washington 981
U.S.A.

2. Director

Prof. J. Liston

3. Responsible Authority

University of Washington

4. Source of Finance

State of Washington
Federal and Private Grant Agencies

5. Foundation Date

1969

6. Major Fields of Interest

Fishery technology
General food science
Microbiology
Chemistry
Engineering

7. Working Facilities

Chemical, microbiological and general teaching and research laboratories, pilot plant and laboratories for food engineering, Cobalt 60 food irradiator, access to research fishing vessels and aquaculture facilities

8. Professional Staff

J. Liston	Director, Professor - Fish technology, microbiology
G. Pigott	Professor - Fish technology, engineering
F. Taub	Professor - Ecology, Aquatic Food chains
J. Matches	Professor - Food technology, microbiology
M. Iwaoka	Assistant Professor - Chemistry

9. Assistants

4-12 Variable

10. Programme

Primary purpose, teaching; degree, B.S.,M.S. and Ph.D.
Marine products research
Food waste recovery and processing
Microbiology of spoilage
Marine microbiology
Studies of marine and freshwater micro-ecosystems
Chemistry of marine foods
Carcinogens in fish
Various short-term projects undertaken as thesis research

11. Training Activities

Full range of programmes leading to B.S. with major in Food Science, M.S., and Ph.D.
Also courses offered specifically in fishery technology
Related programmes available in fisheries
Domestic and foreign students trained

12. Serial Publications

Research in Fisheries - series (partial)

U.S.A.

UTILIZATION RESEARCH DIVISION
NORTHWEST AND ALASKA FISHERIES CENTER
U.S. DEPARTMENT OF COMMERCE

1. Address

2725 Montlake Boulevard East
Seattle
Washington 98112
U.S.A.

Tel: 206 4427746

2. Director

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3. Responsible Authority

National Marine Fisheries Service, NOAA
U.S. Department of Commerce

4. Source of Finance

Federal Government

5. Foundation Date

Approximately 1931

6. Major Fields of Interest

Fish utilization technology (minced flesh, protein isolates, bioactive compounds)
Product quality and safety, particularly botulism and chemical contaminants
Aquaculture - fish nutrition, disease, and feed development

7. Working Facilities

The division has two microbiological laboratories with facilities for botulism research, four analytical laboratories, three protein and enzyme laboratories, and a food technology laboratory for fish utilization studies. There are also pilot plants, library, taste-panel room, and an outlying facility for aquaculture studies

8. Professional Staff

H.J. Barnett	Chemist - Preservation methods
H.W. Eklund	Microbiologist - Leader, product quality and safety, primarily botulism
E.J. Gauglitz Jr.	Chemist - Leader, chemical contaminants
H.S. Groninger Jr.	Chemist - Protein derivatives
A.S. Hall	Chemical contaminants
C.R. Houle	Chemist contaminants
B.J. Koury	Utilization studies, protein concentrates
G. Kudo	Chemist - Utilization studies
L.W. Lehman	Chemist - Aquaculture feeds formulation and evaluation
R. Miller	Chemist - Protein derivatives
D. Miyauchi	Chemist - Leader, utilization studies
R.W. Nelson	Chemical Engineer - Leader, preservation methods and quality assessment
M. Patashnik	Chemical Engineer - Utilization studies
G. Pelroy	Microbiologist - Product quality and safety, primarily botulism
M.E. Peterson	Microbiologist - Product quality and safety, primarily botulism
F.T. Poysky	Food Technology - Product quality and safety primarily botulism
J. Spinelli	Chemist - Leader, utilization studies, protein isolates, derivatives, and concentrates, aquaculture feeds
F.E. Stone	Chemist - Preservation methods
V.F. Stout	Chemist - Chemical contaminants
F.M. Teeny	Chemist - Chemical contaminants
J.C. Wekell	Chemist - Bioactive compounds
J.A. Dassow	Chemist - Deputy Division Director - knowledgeable in all areas of Division's research

The following members of the staff are all stationed in Kodiak, Alaska:

J. Collins	Chemist - Leader, preservation methods and quality assessment
F.A. Bullard	Chemist - Preservation methods and quality assessment
K. Reppond	Chemist - Preservation methods and quality assessment

U.S.A.

9. Assistants

3

10. Programme

Development of fish muscle protein isolates, derivatives, and concentrates
Control of Clostridium botulism in smoked products
Studies on chemical contaminants in fishery resources and products
Isolation and characterization of biologically active substances from aquatic organisms
Improved preservation methods for use on the fishing vessel
Development of fish feeds
Product development
Future research will be directed to:
Product development for export
Complex processed food development
Nutrition of cultured fish
Disease of cultured fish

11. Training Activities

The Division is not a training organization, and neither funds nor facilities nor personnel are available specifically for training
However, from time to time, upon request, if an applicant's area of interest is related to the subject of a research programme in progress, he is welcome to work, alongside the staff, with such direction and instruction as is required to accomplish the task-subject to requirements of the U.S. Department of Commerce
Graduate students, FAO fellows, visiting scientists, etc., are accepted for periods of a few days up to a year

12. Serial Publications

Division's publications generally appear in appropriate scientific journals according to subject matter and sometimes in the serial publications of the National Marine Fisheries Service, either Marine Fisheries Review or Fishery Bulletin

U.S.A.

NATIONAL FISHERIES INSTITUTE

1. Address

1730 Pennsylvania Avenue
Washington, D.C. 20006
U.S.A.

2. Director

Roy E. Martin

3. Responsible Authority

Seafood Processing Industry

4. Source of Finance

Memberships

5. Foundation Date

1948

6. Major Fields of Interest

Fish quality control
Fish utilization technology
Fishery management

7. Working Facilities

Library and documentation service
Trade Association office for industry

8. Professional Staff

Roy E. Martin - Director, Science and Technology, consultant to industry on regulatory and technical problem areas

9. Assistants

Gail T. Pitts

10. Programme

Microbiological profiles of frozen methods
Vibrio Parahaemolyticus survival in seafoods
Selected fatty components of raw and processed seafoods
Deterioration of seafoods under commercial handling practices
Textured vegetable protein and minced fish blends
Pollock and parasites
Texture enhancement and floor stability of minced fish products
Smoked fish technological review

11. Training Activities

Training is through the sponsorship of Seminars, Special Meetings, etc. There is no special facility designed to do this

12. Serial Publications

Inspection Handbook - What FDA Looks For
Anchor Abstracts - Abstracting service to member companies on important commercial technological development
'Flashes' - Monthly Newsletter of current happenings

U.S.S.R.

ALL-UNION RESEARCH INSTITUTE OF MARINE FISHERIES AND OCEANOGRAPHY (VNIRO)

1. Address

17 V. Krasnoselskaya
Moscow B-140
U.S.S.R.

Tel: 264 9454

2. Director

Dr. V.P. Bykov Vice Director

3. Responsible Authority

Ministry of Fisheries of the U.S.S.R.

4. Source of Finance

Ministry of Fisheries of the U.S.S.R.

5. Foundation Date

1921

6. Major Fields of Interest

The Institute is mainly involved in applied research in the field of fishery biology, fish utilization technology and quality control

7. Working Facilities

There are seven laboratories with a staff of 80 and the Institute also runs the exploratory and research vessel ACADEMIC KNIPOVICH

8. Professional Staff

V.P. Bykov	Raw materials for the fish industry and freezing of fish - Vice Director
N.I. Rekhina	Technology of Minced Fish and Aquatic Plants - Chief, Laboratory of Minced Fish and Food Protein Concentrates
A.V. Kardashov	Radiation processing of fish - Chief, Laboratory of General Technology
K.A. Mrachov	Technology of oil and processing of mammals - Chief, Laboratory of Oil and Fodder Products
L.L. Lagunov	Technology of processing of invertebrates
A.N. Golovin	Chief of Laboratory for Chemical Control of Production
E.A. Smotryaeva	Standardization of Fish Products - Chief, Division of Standardization

10. Programme

Studying raw materials for the fish industry, chilling and freezing of fish
Radiation conservation of fish, technology of oils
Technology of protein concentrates and minced fish
Quality control in the fish industry
Standardization of products of the fish industry
In addition to the present programme of work which is expected to continue, a programme to utilize raw material of low value is being planned

11. Training Activities

Training of personnel through post-graduate studentships
There are departments of biology, fishery biology, methods of fishing technology of fish, invertebrates, aquatic plants and mammals
There are full-time correspondence course students and also students from abroad. The chiefs of the laboratories are involved in training
All post-graduates must pass the examination in their speciality and also in foreign languages. The terms of study are 3 years for full-time students and 4 years for correspondence students

12. Serial Publications

Works of VNIRO

YUGOSLAVIA

CENTRE FOR FISHERIES AND ECONOMY OF THE MEDITERRANEAN

1. Address

Oktobarske revolucije 24 a
57000 Zadar
P.O. Box 110
Yugoslavia

Tel: 057 24694
Telex: 5700 ZADAR
Cable: RIBOINSTITUT

2. Director

Borislav Divic

3. Responsible Authority

The Centre is a station of the Institute of Food Science and Technology in Zagreb

4. Source of Finance

Partly Yugoslavian funds for scientific work and partly technical projects for domestic and foreign customers

5. Foundation Date

1954

6. Major Fields of Interest

Fish utilization technology
Fish quality control
Services to industry
Mariculture
Fishing Technology

7. Working Facilities

The Centre has five laboratories, a library and a pilot plant for canning. In addition the Centre has access to vessels owned by the fishing industry

8. Professional Staff

Borislav Divic	Food Technology
Savko Vitlov	Economic analysis
Juraj Lisak	Food engineering
Manda Knezevic	Chemical analysis, new fisheries products
Tomislav Vodopija	Aquaculture
Petar Bretic	Nutrition research
Vladimir Hercig	Food Technology
Lazar Miljak	Mariculture

9. Assistants

1

10. Programme

New product development
Processing and cold storage of freshwater fish
Design and supervision of construction of fish processing plants in Yugoslavia and abroad
Culture of marine fish

11. Training Activities

The Centre runs courses on fish utilization, sanitation and control of fishery products for Yugoslavian and foreign specialists
A three year course has been run in conjunction with the Board of Technical Assistance, Zagreb, The National School, Zadar and the Food Technological Faculty, Zagreb

12. Serial Publications

Prehrambano-Tehnoloska revija, Zagreb - a quarterly review (Food Technology Review)

ZAMBIA

CENTRAL FISHERIES RESEARCH INSTITUTE (CFRI)

1. Address

P.O. Box 100
Chilanga
Zambia

2. Director

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3. Responsible Authority

Department of Fisheries, Ministry of Land, Natural Resources and Tourism

4. Source of Finance

Government

5. Foundation Date

1966

6. Major Fields of Interest

Fishery biology
Fish utilization technology
Fish quality control
Chemistry laboratory

7. Working Facilities

CFRI has laboratories, two research vessels, library, a combined museum laboratory and also a hostel for visitors and trainees. There are four sub stations at Lochinvar, Nonushakende, Sinazongwe and Mpulungu (at present not used)

11. Training Activities

Fisheries Development Zambia
Artisanal Fishing Methods
Processing, Handling, Marketing
Mechanics
Extension

M-40
ISBN 92-5-101002-1